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FROM: <b>Controlling DoD Organization. Commandingd Officer, Aberdeen Proving Ground, MD.</b>
AUTHORITY
<b>USA/FSTC ltr, 8 Nov 1979; USA/FSTC ltr, 8 Nov 1979</b>

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ABERDEEN PROVING GROUND, MD. DEVELOPMENT AND TEST SERVICES  
ABERDEEN PROVING GROUND, MARYLAND  
FIRING RECORD

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OBJECT OF TEST: To Obtain Fragment Velocities with Related Masses, and Spatial Distribution of Fragments of Shell, HE, Soviet, 122mm, Models OF-471N, O-462A, and OF-462.

DATES OF TEST: FROM: 12 June 1952 TO: 27 April 1954  
FIRING RECORD NO. B-11822  
SHEET 1 of 5  
AUTHORITY: MEMO, Chief, Library and Museum Branch, 4 March 1952

DEVELOPMENT: Project No. TB-3-C035

W.O. NO. 962-05-00-3

ehc

AMMUNITION

SHELL: Three each, HE, 122mm, Soviet, Model OF-471N, Filler TNT. (see photograph No. A78159, Incl. 5).

Three each, HE, 122mm, Soviet, Model O-462A, Filler - 90% Ammonium Nitrate, 10% TNT. (see photograph No. A78158, Incl. 5).

Three each, HE, 122mm, Soviet, Model OF-462, Filler - 80% Ammonium Nitrate, 20% TNT. (see photograph No. A78157, Incl. 5).

DETONATOR: Nine each, Detonator, Electric, M36.  
Nine each, Detonator, M18.

GROUP 3

DOWNGRADED AT 12 YEAR INTERVALS

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TABULATION OF AMMUNITION WEIGHTS

RD NO.	DATE FIRED	LOADING	LOADED SHELL w/o FUZE (lbs)	COMPOSITION C <sub>3</sub> BOOSTER (lbs)	TETRYL PELLET (lbs)	SHELL AS FIRED (lbs)
MODEL OF-471N						
14	14 April 53	TNT	54.50	0.15	0.013	54.66
15	24 April 53	TNT	54.61	0.15	0.013	54.77
16	21 May 53	TNT	54.77	0.16	0.013	54.94
MODEL O-462A						
11	12 June 52	AT/90	46.06	0.15	0.013	46.22
17	4 June 53	AT/90	46.05	0.18	0.013	46.24
20	31 July 53	AT/90	46.18	0.16	0.013	46.35
MODEL OF-462						
13	8 Oct 52	AT/80	45.64	0.11	0.013	45.76
18	30 June 53	AT/80	46.41	0.13	0.013	46.55
19	15 July 53	AT/80	45.66	0.18	0.013	45.85

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FILED RECORD NO. B-11822  
SHEET 2 of 5

FACILITIES

**A. TEST SET UP:**

1. Board Panels: The facilities for obtaining spatial distribution were two panels, 9.00 feet in height, constructed on concentric, 180 degree arcs of 30 and 60 feet radii and positioned so that the panels include 360 degrees. Panel boards were one inch, dressed ponderosa pine (one inch dressed boards measure 25/32 inch). The panels were gridded and numbered in accordance with "Layout of Panels for Number and Distribution of Fragments" on pages 32 thru 40 of O.P.M. 40-23.

2. Ricochet Stop: A ricochet stop was provided for both radii midway from the center of the setup to each panel. Each forming an arc of 180°, and constructed to prevent ricocheting fragments from impinging on the board panel.

3. Velocity Fragment Recovery: A recovery box 8' X 4' X 6', filled with a quantity of composition wallboard, each 48" X 96" X 1/2", and faced with a flash target of duralumin (.020 inch thick), was placed on its side approximately 23 feet from the center of the setup.

**B. FRAGMENT VELOCITY MEASUREMENT:**

A high speed motion picture camera, operating at approximately 8,000 frames per second, was used to photograph the flash target. The camera utilizes an electronic circuit, employing a frequency standard and a neon lamp, which causes exposed pins to appear on the film strip at time intervals of 0.001 second. Detonation of the shell is recorded on the film strip by reflection of the shell detonation flash from a mirror placed adjacent to the flash target; and or by the detonation flash of a small tetryl charge, placed so as to be visible by the camera, initiated electrically through a circuit in parallel with the composition C3 booster. The shell fragments perforating the flash target cause subsequent individual flashes to appear. The intervals between the initial and each subsequent flash are converted to time intervals through the film calibration. The distance from the shell surface to the flash screen is used with the time intervals to compute the average velocity for each of the individual fragments. The flash target was placed so that the center was perpendicular to the shell axis at the center of gravity of each shell. Fragments perforating the flash target were recovered from the composition wallboard and identified as to weight and velocity. The recovered fragments are shown in photograph No. A97557 and No. A97558, Incl 5.

**C. SHELL POSITION:**

Each shell was horizontally suspended at a height of 4.50 feet (from the bottom of the panels), with the panel axis passing through the center of gravity of the shell. The nose end of the shell was oriented toward panels number one, with the projected shell axis in a radial plane containing the initial edge of panels number one.

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FIRING RECORD NO. B-11822  
SHEET 3 of 5

D. STATIC DETONATION:

An M36 electric detonator and an M18 detonator were used with a 90 grain tetryl pellet and a composition C3 charge molded into the fuze booster cavity. Initiation was accomplished by energizing the firing line with the charge from a 120 volt firing line condenser.

E. RECORDING DATA:

Perforations and penetrations of the panel were measured and recorded as the numerators of the fractional dimensions in sixteenths of an inch. Perforations or penetrations having any dimension less than one sixteenth inch were not recorded. The spatial distribution of hits are represented by a plot on a gridded form. (Panel A, APG 11876-15 PR; Panel B, APG 11876-14 PR; both dated 27 October 1944).

ROUND-BY-ROUND DATA

Contained in Each Round:

1. Cover Sheet - Shell markings.
2. Velocities and Related Masses.
3. Measurements of Perforations and Penetrations.
4. Plot Sheets of Spatial Distribution.

*Army Materiel Command  
Foreign Science & Technology Center  
Munitions Bldg. Wash DC 20315*

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SUMMARY

Table I

VELOCITY FRAGMENTS				HITS IN PANELS					
RD NO.	SAMPLE SIZE	AVG WT (grs)	AVG VEL (fps)	30 ft RADIUS			60 ft RADIUS		
				PERFS	PENS	% PERFS	PERFS	PENS	% PERFS
MODEL OF-471N, TNT									
14	75	127.9	2805	127	366	25.8	40	165	19.7
15	74	116.0	2932	187	532	26.0	94	189	33.2
16	61	119.6	2985	114	260	30.5	55	149	27.0
AVG	70	121.3	2903	143	386	27.0	63	167	27.4
MODEL O-462A, AT/90									
11	149	35.2	2393	319	1518	17.4	101	640	13.6
17	239	19.5	2565	387	1404	21.6	130	509	20.3
20	334	18.2	2376	426	2056	17.2	134	743	15.3
AVG	241	22.1	2444	377	1659	18.5	122	631	16.2
MODEL OF-462, AT/80									
13	60	99.6	2968	185	279	39.9	97	84	53.6
18	71	106.4	2751	110	170	39.3	55	84	39.6
19	72	94.3	3044	124	216	36.5	54	75	41.9
AVG	68	100.1	2928	140	222	38.7	69	81	46.0

Table II

Average Density of Fragments In Panel Setup Per Square Yard

SHELL NUMBER	FILLER	30 ft RADIUS			60 ft RADIUS		
		PERFS	PENS	TOTAL	PERFS	PENS	TOTAL
14, 15 & 16	TNT	1.52	4.10	5.61	0.33	0.89	1.22
11, 17 & 20	AT/90	4.00	17.60	21.60	0.65	3.35	4.00
13, 18 & 19	AT/80	1.49	2.36	3.84	0.37	0.43	0.80

The panel boards were of one inch dressed ponderosa pine.

The velocities were measured over an average of approximately 22.75 feet.

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FIRING RECORD NO. B-11822  
SHEET 5 of 5

OBSERVATIONS

The Test Results Indicate That:

✓ Shell, 122mm, Soviet, Model OF-471N, Filler TNT, will produce an average side fragment of 121.3 grains, with an initial velocity of 3106 fps, producing an average casualty range of approximately 83 feet. In the panel of 30 foot radius, 5.61 hits per square yard were inflicted, 1.52 of which were perforating. In the panel of 60 foot radius, 1.22 hits per square yard were obtained, 0.33 of which were perforating. The main fragment spray fell between 77 and 103 degrees from the nose of the shell.

Shell, 122mm, Soviet, Model O-462A, Ammonium Nitrate 90% - TNT 10%, will produce an average side fragment of 22.1 grains, with an initial velocity of 2762 fps, producing an average casualty range of approximately 75 feet. In the panel of 30 foot radius, 21.60 hits per square yard were inflicted, 4.00 of which were perforating. In the panel of 60 foot radius 4.00 hits per square yard were obtained, 0.65 of which were perforating. The main fragment spray fell between 77 and 106 degrees from the nose of the shell.

Shell, 122mm, Soviet, Model OF-462, Ammonium Nitrate 80% - TNT 20%, will produce an average side fragment of 100.1 grains, with an initial velocity of 3049 fps, producing an average casualty range of approximately 82 feet. In the panel of 30 foot radius, 3.84 hits per square yard were inflicted, 1.49 of which were perforating. In the panel of 60 foot radius, 0.90 hits per square yard were obtained, 0.37 of which were perforating. The main fragment spray fell between 83 and 106 degrees from the nose of the shell. ↗

NOTE: A perforation of the pine board panel is considered a casualty. A casualty producing fragment is considered as such, if, upon reaching the panel, the potential energy is 58 ft/lbs or greater (see TM 9-1907).

APPROVED:

*Benjamin S. Goodwin*  
BENJAMIN S. GOODWIN  
Chief,  
Arms & Am Div

*Claude E. Brown*  
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Chief, Bomb and  
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*Orion L. Rogers*  
ORION L. ROGERS  
Engineering Aide

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FIRING RECORD NO. B-11822  
INCLOSURE NO. 1

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~~Mr. Butler~~  
U.S. Naval Weapons Lab  
Dahlgren, Va.

FIRING RECORD NO. B-11622  
INCLOSURE 2

AUTHORITY

Office Memorandum

Chief, Library and Museum Branch  
4 March 1952 with one inclosure

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1

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OFFICE MEMORANDUM:

TO : Chief, A&A Div. D&PS

CONFIDENTIAL DATE: 03 Jarrett/mle/3296  
4 March 1952

FROM : Chief, Library & Museum Branch

SUBJECT : Shell Fragment Identification

1. Attention is invited to the attached correspondence. This office has contacted the Director's office for permission to instigate this program. It is requested that Mr. Willan detonate possibly eight soviet projectiles to obtain velocities and patterns of the fragments. The Director's office says that this can be done on an inbetween basis by Mr. Willan, that he can give us the information as it becomes available.

2. If your office concurs we will appreciate such expeditious effort as is consistent with the present work load. Mr. Reed at extension 3296 will furnish the information as Mr. Willan requests it. Mr. Willan can discuss further details with the writer or Mr. Kempf.

/s/ Jarrett  
G. B. JARRETT

1 Incl  
1-ltr from EUSAK

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B-11822

HEADQUARTERS  
EIGHTH UNITED STATES ARMY KOREA (EUSAK)  
Office of the Ordnance Officer  
APO 301

KODP 386.3

12 February 1952

SUBJECT: Shell Fragment Identification.

APC 386.3/174

TO : Commanding General  
Aberdeen Proving Ground  
Maryland

1. EUSAK OTID teams have been using the draft copies of "Ready Reference Manual for the Identification of Soviet Shells and Shell Fragments" for the past three months. They report that the information contained in the manual has been of great assistance and value in their work. There are, however, additional features which they all agree should be included in the final version of the manual.

a. U.S. Shell and Shell Fragments. OTID personnel are frequently called upon to identify fragments of U.S. shells which have been fired by the enemy. Our combat troops are reluctant to accept such identification unless they can be shown the direct similarity between the fragments and either U.S. shell or drawings thereof. Accordingly, it seems highly desirable to include in the identification manual as a section, or prepare as a combination manual, appropriate discussion, drawings, and photographs pertaining to U.S. shells.

b. Seat Keying Indentations. Although keying indentations of rotating band seats appear on drawing sheets in the present manual, they are of reduced size and not suitable for use in the field. In a majority of cases in which OTID personnel are called on for fragment identification, on-the-spot identification is desired and time does not permit the use of mathematical computations. Therefore, a definite requirement exists for including in the manual full-scale, dimensioned drawings of keying indentations.

c. Fragment Radii. OTID personnel are frequently queried regarding the casualty-producing radius and the maximum fragment effectiveness areas of Soviet shells. All agree that data on these characteristics should be included in the manual.

2. Pending publication and issue of a revised manual which may include the additional features discussed above, it is requested that this office be furnished:

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B-1182

a. Reproducible full-scale drawings of the keying indentations in the rotating band seats of all U.S. and Soviet artillery projectiles.

b. Data on the casualty-producing radius and the maximum fragment effectiveness areas of all Soviet high explosive shells.

FOR THE ORDNANCE OFFICER:

JOHN H. WEBER  
Col, Ord Corps  
Deputy Ord Officer

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FIRING RECORD NO. E-11822

INCLOSURE NO. 3

ROUND-BY-ROUND DATA

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FIRING RECORD NO. B-11822  
INCLOSURE 3

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14 April 1953

ROUND NO. 14

SHELL, HE, 122mm, Soviet  
MODEL, CP - 471N, (TNT)

SHELL MARKINGS

OBVERSE

H  
635  
32-45  
122  
++

REVERSE

T  
Ø - 471H

BASE

179  
79 45

Weight of Shell w/o Components- 54.50 lbs.  
As Fired- 54.66 lbs.

Distance from Shell to the center of the 0.020" duralumin flash target- 22.67 ft.

Shell before firing is shown in AFG Photograph No. A78159.

Recovered fragments with their respective weights and velocities are shown in AFG Photograph No. A97558.

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FRAGMENT VELOCITY DATA

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Test of Shell, HE, Soviet, 122mm, TNT

Side Recovery Box Data

Proof Director Mr. O. L. Rogers

Date Fired 14 April 1953

Distance from detonation point to target 22.67 feet. Round No. 14

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
1	N.R.		17	N.R.	3276	33	0+	
2	151	2954	18	13	3276	34	2	
3	N.R.		19	15		35	1	
4	22		20	6		36	18	
5	398(2)	2983	21	2		37	93	2061
6	2		22	51	3173	38	N.R.	2498
7	7		23	98(2)	3173	39	956	3075
8	2		24	59	2351	40	225	2983
9	1		25	538	3123	41	57(2)	
10	55	2630	26	599	3173	42	496	2221
11	2	2856	27	812	2082	43	27	3075
12	110	2530	28	65	1686	44	55	2856
13	505	2897	29	11		45	439	2297
14	N.R.	3028	30	1		46	9	
15	25	2815	31	2		47	49	
16	1089	3123	32	3		48	407(3)	2562

Average velocity 2805 ft/sec.

NV - no velocity recorded.

NR - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than ± 3.2 % for the highest velocity and ± 2.9 % for the lowest velocity.

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**FRAGMENT VELOCITY DATA**

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Test of Shell, HE, Soviet, 122mm Side Recovery Box Data

Proof Director Mr. O. L. Rogers Date Fired 14 April 1953

Distance from detonation point to target 22.67 feet. Round No. 14

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
49	2		65	202	3507			
50	462		66	1				
51	47		67	19(2)				
52	5	2613	68	2				
53	4		69	5				
54	4		70	139(2)				
55	2		71	2				
56	705	2613	72	7				
57	3	3042						
58	9							
59	5							
60	326							
61	3	1979						
62	144	3224						
63	1	3224						
64	18(2)	3028						

Average velocity 2805 ft/sec.

NV - no velocity recorded.

NR - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than + 3.2 % for the highest velocity and + 2.9 % for the lowest velocity. 2 2

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PENETRATIONS OF SHELLS IN PANELS

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B-11822

TEST NUMBER \_\_\_\_\_ DATE 14 Apr 53

FIRING RECORD NUMBER \_\_\_\_\_

PRIORITY NUMBER \_\_\_\_\_

XXXXXXXXXX Sheet 1 of 13

XXXXXXXXXX Round No. 14

ROCKET NUMBER \_\_\_\_\_

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT

Soviet

13 PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
8			1	1	1
			1	1	1
			1	1	1
Total					3
9			7	5	2
Total					1
12			2	1	1
Total					1
14			1	1	1
Total					1
18			1	1	3
Total					1
21			1	1	1
Total					1
			1	1	2
			1	1	1
Total					2
3	2		2	1	2
			3	2	4
			1	1	1
	1				3
			1	1	1
			1	1	3
					2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
25	3	1	4	3	6
			2	2	2
			2	1	1
Total		1			3
26	6	4	1	1	1
	4	4	2	1	3
	8	2	2	2	4
			6	3	7
Total		3			4
27	21	12	2	1	2
	2	1	2	1	1
	13	6	6	2	3
	9	4	3	2	9
	6	3	1	1	1
	4	3			
	24	10			
	24	6			
	10	5			
	3	2			
	4	3			
Total		11			5
28	14	4	3	2	4
	5	4	6	2	4
	6	3	2	1	1
	35	10	1	1	1
	11	6	3	2	4
Total		5			5
29	9	5	1	1	1
	10	6	1	1	1
	14	4	4	2	4

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## PENETRATIONS OF SHELLS IN PANELS

DATE 14 Apr 53

FIRING NUMBER

PRIORITY NUMBER

XXXXXX Sheet 2 of 13

XXXXXX Round No. 14

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT

Soviet

IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
29	4	3	1	1	1	33	10	16	2	1	2
Total		4			4		10	5	2	1	1
							5	2	2	1	1
30	50	10	1	1	2		10	5	3	2	4
	64	16	5	3	4		29	7	2	1	1
	4	3	2	2	2		6	4			
Total		3			3		9	7			
						Total		11			9
31	4	3	1	1	1						
	8	2	1	1	1	34	22	12	1	1	1
	3	2	1	1	1		14	8	1	1	1
	17	7	4	2	6		11	6	2	1	1
Total		4			4		45	10	3	1	1
							15	8	1	1	1
32	4	3	2	1	3		12	6	5	1	4
	8	3	2	1	2		11	6	5	3	4
	14	9	4	1	4		12	5			
	15	8					9	7			
	10	4					4	4			
	5	3					32	8			
	6	4					54	18			
	4	4					20	9			
	24	9				Total		13			7
	13	11									
	10	5				35	6	4	3	2	2
	9	5					24	8	6	4	6
	12	8					8	6	8	4	5
	5	4					12	7	3	1	1
Total		14					22	8	2	2	6
							26	6	1	1	1
33	4	3	4	3	5		8	6	1	1	1
	8	6	1	1	4		4	2	6	2	2
	7	3	2	1	2		7	3	1	1	1
	11	7	1	1	1			4	1	1	1

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PENETRATIONS OF SHELLS IN PANELS

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15 NUMBER

FIRING REG. NUMBER

DATE 14 Apr 53

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT

Soviet

IN PANELS WITH RADIUS OF 30' AND FEET

PRIORITY NUMBER

XXXXXXXXX Sheet 3 of 13

XXXXXXXXX Round No. 14

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
Total		10			10
36	7	5	1	1	1
	8	4	4	2	5
	5	4	1	1	1
	5	5	2	2	5
			1	1	1
			3	2	5
			4	2	9
Total		4			7
37	16	11	2	2	2
	4	3	5	3	5
	17	12	3	1	4
Total		3			3
38	20	10	1	1	1
	8	6	2	1	1
			1	1	1
Total		2			3
39	24	8	2	1	2
	20	16	1	1	1
			2	1	2
			7	3	4
			1	1	1
Total		2			5
40	6	4	2	1	2
	6	6	3	1	1
			1	1	1
			2	1	1
			2	1	1
			2	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
Total		2	3	1	1
41	8	4	2	1	3
			3	2	4
			1	1	1
			2	1	1
Total		1			4
42			2	1	2
			2	2	1
Total					2
43			2	1	1
			4	2	3
			1	1	1
			1	1	1
			1	1	1
Total					5
44	6	4	3	1	2
			3	2	2
			4	1	1
			2	1	1
			1	1	1
			2	1	1
			6	4	7
			3	1	2
			2	1	1
			1	1	1
Total		1			10

~~CONFIDENTIAL~~

17



PENETRATIONS OF SHELLS IN PANELS

LOG NUMBER

FIRING RANGE NUMBER

PRIORITY NUMBER

DATE 14 Apr 53

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT

IN PANELS WITH RADIUS OF 30' AND FEET

Sheet 4 of 13

Round No. 14

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
45	6	4	1	1	1
			4	3	2
			2	2	1
			1	1	1
			2	1	1
			7	4	4
			4	2	3
			2	1	2
			1	1	1
			2	1	2
			1	1	1
			1	1	1
			3	2	2
			2	1	2
			2	1	1
			1	1	1
			4	4	2
			2	1	1
			2	1	1
			1	1	1
Total		1			20
46	4	3	2	1	1
	8	4	3	1	1
			2	1	2
			3	1	1
			1	1	1
			4	1	3
			3	2	1
			1	1	1
			4	1	2
			4	1	3
			2	1	1
			1	1	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
46			2	1	1
			2	1	2
			1	1	1
			1	1	1
			1	1	2
			2	1	2
			3	1	5
Total		2			19
47	8	5	4	4	3
	8	4	2	1	2
			4	2	1
			4	2	2
			3	2	1
			2	1	1
			3	2	2
			1	1	1
			5	1	2
			2	1	1
			1	1	1
			3	2	3
			1	1	1
			4	3	4
			5	3	1
			1	1	1
Total		2			16
48	7	3	1	1	1
	12	7	3	2	4
			2	1	1
			1	1	1
			2	1	1
			3	2	2

# PENETRATION OF SHELLS IN PANELS

DATE 14 Apr 63

PENETRATIONS OF SHELL 122MM, OF-471N LOADED TNT  
Soviet

IN PANELS WITH RADIUS OF 30' AND

XXXXXXXX Sheet 5 of 13  
XXXXXXXX Round No. 14

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	1	1
			1	1	1
Total		2			9
49	4	2	2	1	4
			3	1	2
			2	1	1
			1	1	1
			2	1	1
			4	2	8
Total		1			6
50			3	2	3
			4	2	2
			2	1	2
			2	1	2
			1	1	1
			5	4	2
Total					6
51			4	2	4
			1	1	1
			2	1	2
			1	1	1
			1	1	1
			4	2	2
			2	1	2
			1	1	1
Total					8
52			2	2	2
			3	2	1
			2	2	1
			2	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
52			1	1	1
			2	1	1
			2	1	2
			4	2	8
			4	2	4
			2	1	2
			2	1	1
			3	1	2
			5	3	5
			6	4	5
			4	3	4
			2	1	1
			1	1	1
			3	2	2
			1	1	1
Total					19
53	5	2	1	1	1
			1	1	1
			4	1	3
			2	1	1
			2	1	1
			5	2	4
			2	1	1
			1	1	1
			2	1	1
			4	2	4
			4	3	2
			3	1	2
			1	1	1
			1	1	1
Total					14

# PENETRATIONS OF SHELLS IN PANELS

CONFIDENTIAL

6-11522

DATE

14 Apr 53

FIRING NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT

Soviet

30'

AND

FEET

Sheet 6 of 13

Round No. 14

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
54			2	2	2
			2	1	1
			1	1	1
			2	1	2
			2	1	3
			8	3	4
			1	1	1
			5	1	2
Total					8
55			1	1	1
			2	1	1
			4	2	1
			2	1	2
			1	1	1
			1	1	1
			4	3	6
Total					7
56	8	4	1	1	1
			3	2	1
			1	1	1
			4	3	2
			16	4	2
			6	1	2
Total		1			6
57			2	1	1
			1	1	1
			1	1	1
			1	1	1
			1	1	1
			4	3	2
Total					6

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
58.1			2	1	3
			3	2	4
			2	1	1
Total					3
58.2			3	1	1
			1	1	1
Total					2
58.3			3	2	1
			3	4	4
			1	1	1
Total					3
58.4			3	2	2
			1	1	1
Total					2
58.5			1	1	1
Total					1
58.6			4	2	4
Total					1
59.1			2	1	1
Total					1
59.2			2	1	1
			4	1	1
			4	1	2
Total					3

CONFIDENTIAL

**CONFIDENTIAL**

B-11822

ORD 86-717 18 FEB 48  
FORMERLY SPOTZ-P-201

**PENETRATIONS OF SHELLS IN PANELS**

LOT NUMBER

DATE 14 Apr 53

FIRING RECORD NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT

~~XXXXXXXX~~ Sheet 7 of 13

Soviet

~~XXXXXXXX~~ Round No. 14

IN PANELS WITH RADIUS OF 30' AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
59.3			4	2	2
Total					1
59.4	7	3	2	1	2
Total		1			1
59.6	9	5			
Total		1			
60.1			3	2	2
			1	1	1
Total					2
60.2			4	2	1
			2	2	2
			1	1	1
Total					3
60.3			1	1	1
			3	1	1
			1	1	1
			1	1	1
			2	1	2
Total					5
60.4	16	16	2	1	2
Total		1			1
60.6			4	2	5
			5	3	4
			1	1	1
Total					3

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PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
61.1	6	3	1	1	1
	3	3	5	2	4
			1	1	1
			1	1	1
Total		2			4
61.2	30	21	4	2	2
			1	1	1
			4	2	2
Total		1			3
61.3	16	10	2	2	2
	6	4	1	1	1
			4	4	6
			2	1	1
Total		2			4
61.5			3	2	4
			3	1	2
			5	3	2
Total					3
61.6	24	6	1	1	1
	20	14	1	1	1
			1	1	1
Total		2			3
62.1	5	4			
Total		1			
62.2			4	1	2
			1	1	1
			2	2	2
			1	1	1

CONFIDENTIAL

B-11722

ORD 737 14 FEB 48  
FORMERLY SPOTZ-P-281

## PENETRATION OF SHELLS IN PANELS

FIRING NUMBER

DATE 14 Apr 53

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT

XXXXXXXXXX Sheet 8 of 13

XXXXXXXXXX Round No. 14

IN PANELS WITH RADIUS OF 30' AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
62.2					
Total					4
62.3	12	10	5	2	4
			2	1	2
			1	1	1
Total		1			3
62.4			6	2	4
			2	1	1
			1	1	1
			2	2	2
			6	4	2
			2	2	1
			2	1	1
Total					7
62.5	8	4	1	1	1
			4	2	2
			1	1	1
Total		1			3
62.6			3	2	1
			5	3	4
Total					2
63.1	7	4	8	3	5
			2	1	3
			1	1	1
Total		1			3

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PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
63.2	14	5	1	1	1
	9	2	6	4	4
	23	14	1	1	1
	21	21	4	2	3
			2	2	3
			1	1	1
			2	2	3
			1	1	1
			4	4	2
			5	3	4
			2	1	2
			1	1	1
Total		4			12
63.3	4	2	1	1	1
			2	1	1
			1	1	1
			4	3	3
			3	2	3
Total		1			5
63.4	25	21	23	3	2
	6	5	1	1	1
			1	1	1
			4	1	3
			3	1	1
			2	1	1
			12	5	4
Total		2			7
63.5			2	1	1
			2	1	1
			4	4	3
			1	1	1

DATE 14 Apr 53

B-11822

PENETRATIONS OF SHELL 122mm. OF-471N LOADED TNT

Soviet  
IN PANELS WITH RADIUS OF 30' AND FEET

PRIORITY NUMBER

~~CONFIDENTIAL~~ Sheet 9 of 13

~~XXXXXXXX~~ Round No. 14

ROCKET NUMBER

[illegible][illegible]

~~CONFIDENTIAL~~

PENETRATIONS OF SHELLS IN PANELS

CONFIDENTIAL

B-11822

DATE 14 Apr 53

FIRING NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, OF-471M LOADED TNT

XXXXXXXXXX Sheet 10 of 13

XXXXXXXXXX Round No. 14

IN PANELS WITH RADII OF Soviet 60' AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
1.2			1	1	1
Total					1
2.2			2	1	1
Total					1
4.1			3	1	1
Total					1
7			1	1	1
Total					1
14			1	1	1
Total					1
15			2	1	2
Total					1
17			5	2	1
Total					1
20			1	1	1
Total					1
21			2	1	2
			2	1	2
Total					2
25			2	1	1
			2	1	1
Total					2
26			2	1	1
Total					1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
27			3	1	1
			2	1	1
			2	1	4
Total					3
28			5	3	6
			3	2	3
			1	1	1
			2	2	2
			2	1	1
			1	1	1
			1	1	1
Total					7
29	30	11	1	1	1
	8	6	3	2	1
			1	1	1
Total		2			3
30	44	14	8	3	2
			1	1	1
			1	1	1
			10	3	2
			12	3	5
			4	2	3
			1	1	1
			4	4	8
			2	1	1
			5	4	5
			3	3	3
			3	2	4
Total		1			12

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B-11822

ORDSG-727 18 FEB 48  
FORMERLY SPOT-F-201

## PENETRATIONS OF SHELLS IN PANELS

EST. NO.

DATE 14 Apr 50

FIRING NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT

XXXXXXXXXX Sheet 11 of 13

XXXXXXXXXX Round No. 14

IN PANELS WITH RADIUS OF 60' AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
31	14	6	1	1	1	34			4	3	2
	21	6	12	8	3				2	1	1
			4	3	2				2	2	2
			4	3	2				3	2	2
			1	1	1				1	1	1
Total		2			5	Total		7			14
32	40	11	4	3	3	35	24	10	1	1	1
			1	1	1		6	4	4	3	2
			1	1	1		8	5	1	1	1
			4	2	2		8	4	1	1	1
			2	2	2		12	5	2	1	1
			1	1	1		12	4	1	1	1
Total		1			6		11	5	1	1	1
33	5	2	7	4	8				2	2	2
	8	7	9	4	4				3	2	4
			1	1	1	Total		7			9
			12	4	5	36	9	6	3	2	2
			7	4	6		6	3	3	2	1
			1	1	1		16	12	3	2	2
			1	1	1		8	3	1	1	1
			1	1	1		14	6	2	2	2
Total		2			8		22	14	5	1	1
34	5	4	3	3	2				1	1	1
	11	8	5	3	3				2	2	1
	9	6	6	4	6				2	1	1
	8	2	4	4	5	Total		6			9
	6	5	4	3	3	37			1	1	1
	34	6	2	1	1				2	2	1
	38	20	4	3	8				2	2	1
			1	1	1	Total					3
			4	3	3						



ORD 80-737 18 FEB 48  
FORMERLY SPOTZ-P-281

# PENETRATIONS OF SHELLS IN PANELS

LOT NO.

FIRING RECORD NUMBER

PRIORITY NUMBER

DATE 14 Apr 53

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT

Sheet 12 of 13

Round No. 14

IN PANELS WITH RADIUS OF

60

AND

FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
38			7	3	6
Total					1
40			7	5	7
			3	2	2
Total					2
42			6	5	10
			6	2	2
Total					2
44			4	2	3
Total					1
45	6	5			
	6	4			
Total		2			
49	12	8	2	1	1
			2	1	1
			3	1	2
			4	2	1
			3	1	1
Total		1			5
48			1	1	1
			3	2	2
			2	2	1
			2	2	2
Total					4
50			4	2	2
			1	1	1
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
50			1	1	1
Total					4
51			4	2	4
			1	1	1
			4	2	5
Total					3
52			1	1	1
			3	2	2
Total					2
53			6	3	3
Total					1
54	5	4	6	2	1
			2	1	1
Total		1			2
55			2	2	2
Total					1
56			1	1	1
Total					1
57			7	4	3
Total					1
58.2			2	2	2
Total					1
58.3			6	3	2
Total					1

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**CONFIDENTIAL**

R-119252

ORD 787 19 FEB 49  
FORMERLY SPOTZ-F-201

**PENETRATIONS OF SHELLS IN PANELS**

LOT NO.	DATE 14 Apr 58
FIRING REC. NUMBER	
PRIORITY NUMBER	
XXXXXX Round No. 14	
XXXXXX Sheet 13 of 13	
ROCKET NUMBER	

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT  
Soviet  
IN PANELS WITH RADIUS OF 60' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
59.1			4	4	1
			1	1	1
Total					2
59.3			6	2	1
			1	1	2
Total					2
60.2	24	14			
Total		1			
60.3	12	10			
Total		1			
61.2	16	10			
Total		1			
61.3			4	3	6
			5	3	4
			4	3	2
			4	4	3
			1	1	1
			2	1	1
Total					6
62.1			2	2	1
Total					1
62.2	8	5	7	4	2
			2	2	1
Total		1			2
62.3			3	2	2
			1	1	1

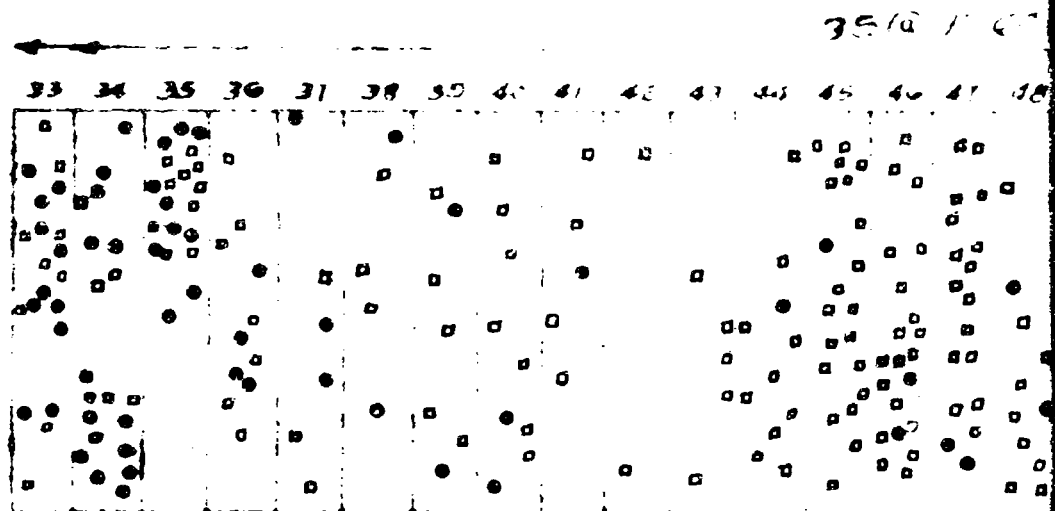
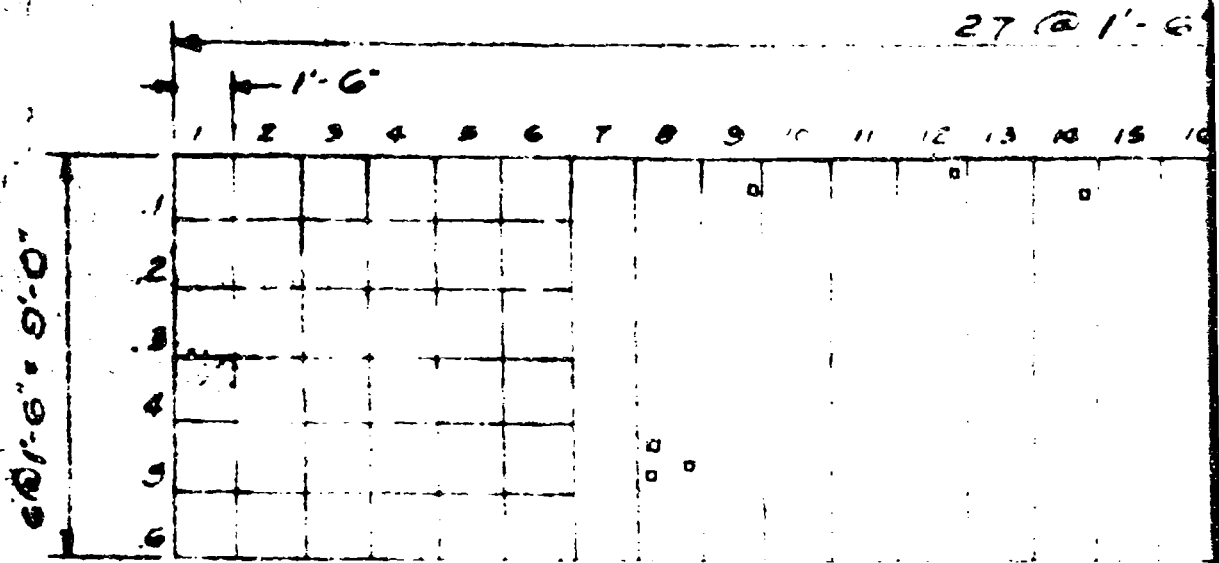
PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
62.3			2	2	1
			1	1	1
			2	2	2
			2	2	2
			1	1	1
			1	1	1
			2	2	2
Total					9
63.1	19	14	1	1	1
	17	8	4	3	3
			2	1	1
			2	1	1
Total		2			4
63.2	8	3	2	1	1
	24	20	3	1	3
			4	2	2
			1	1	1
			5	2	3
			5	3	3
			5	3	3
			2	1	1
			2	1	1
Total		2			9
63.3			2	1	1
			7	3	7
			2	2	1
			2	1	1
Total					4
TOTALS					
60' Radius	40				163

**CONFIDENTIAL**

B-11822

CONFIDENTIAL PANEL

30 FT RADIUS



1" NO. 3 PINE BOARDS (DRESSED) PL

DATE 4-14-53 RD. NO. 14 PERFORATIONS

SHELL 122 MM SOVIET PENETRATIONS

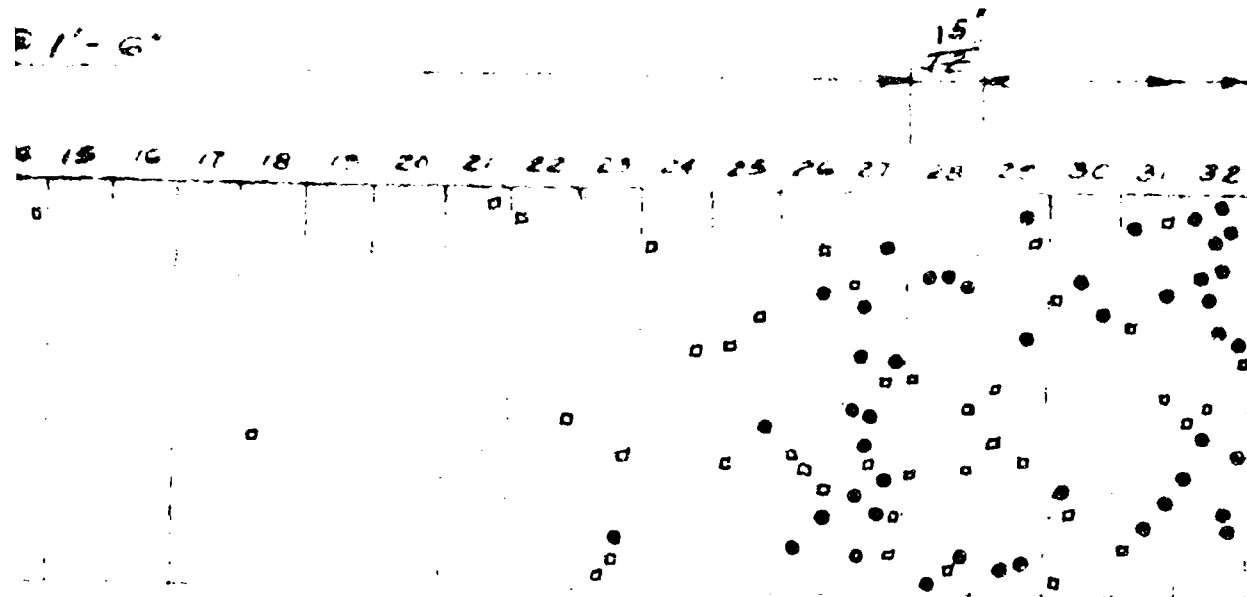
SUSPENSION HORIZONTAL

CONFIDENTIAL

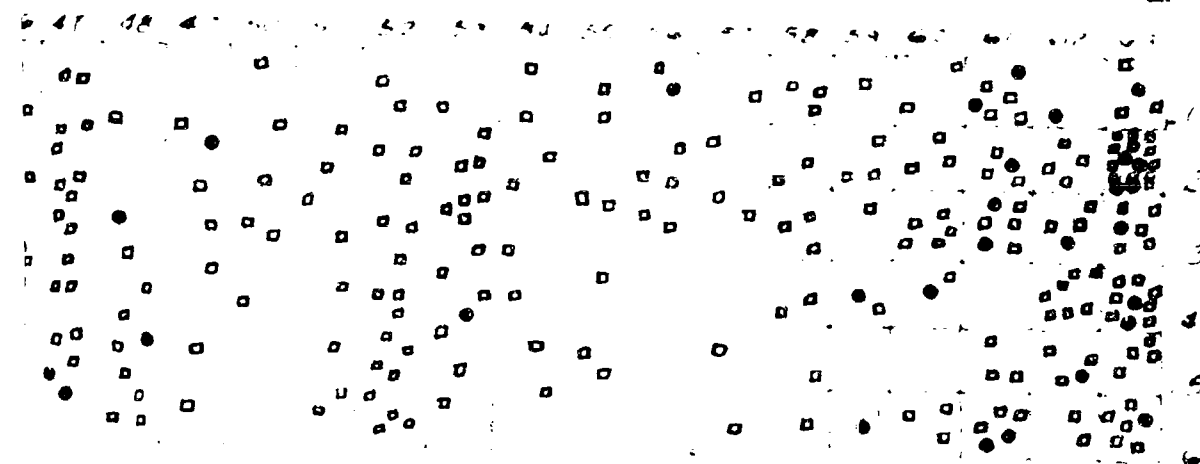
VEL A

RADIUS 180" ARC

E 1' - 6"



E 1' - 6"



PLACED VERTICALLY

IONS 127 ●

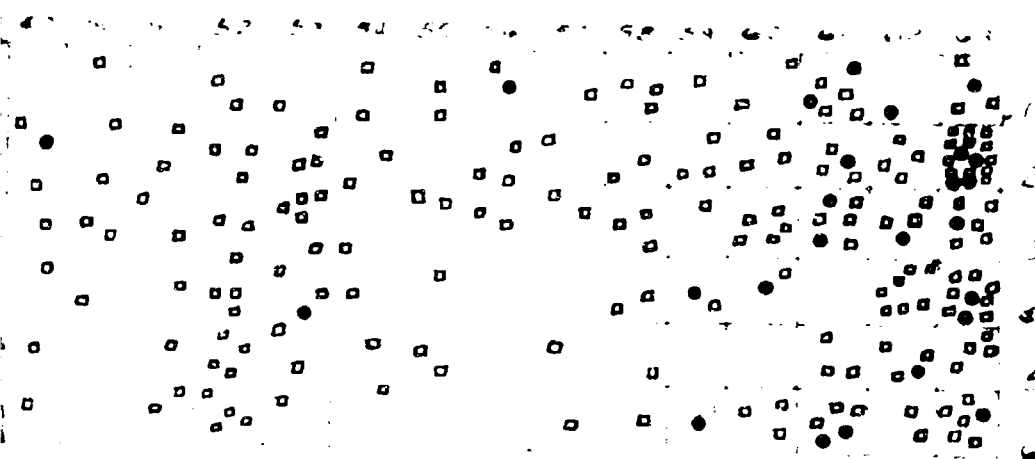
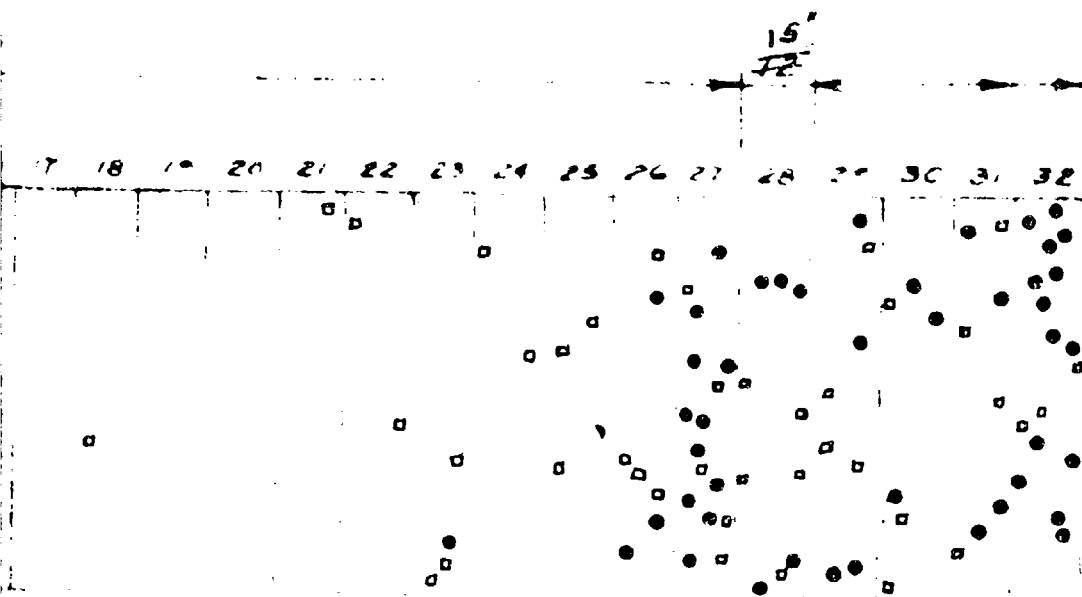
IONS 366 □

RANGE OPERATIONS SECTION

POINT OF ORIGIN  
FOR

NUMBER AND DISTRIBUTION  
OF FRAGMENTS  
(NOT AT EDGE(S))

180° ARC



ACID VERTICALITY

127 ●  
36 6 □

RANGE CORRELATION SECTION

POINT OF DEVELS  
FOR

NUMBER AND DISTRIBUTION  
OF FRAGMENTS  
(LOC AT EDGES)

REMARKS: ...  
DATE: ...

14 B

0

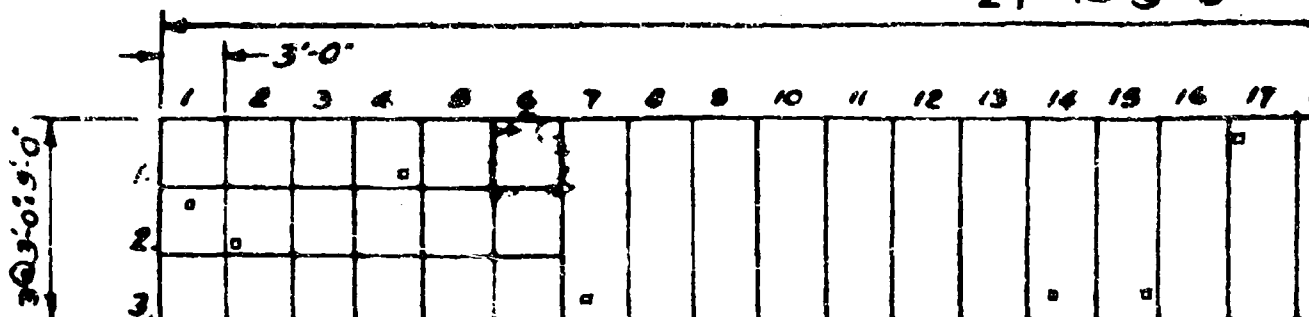
B-11822

1

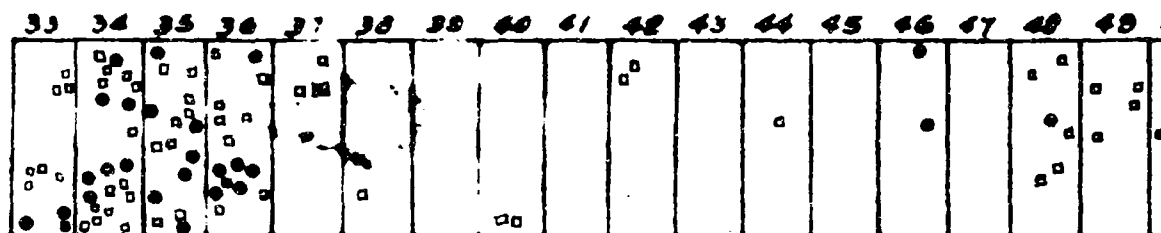
PANEL B

30 FT. RADIUS K

27 @ 3'-0"



35 @ 3'-0"



1" NO. 3 PINE BOARDS (DRESSED) PLACED

DATE 4-14-53 RD. NO. 14 PERFORATIONS 40SHELL 122 MM SOVIET PENETRATIONS 163SUSPENSION HORIZONTAL

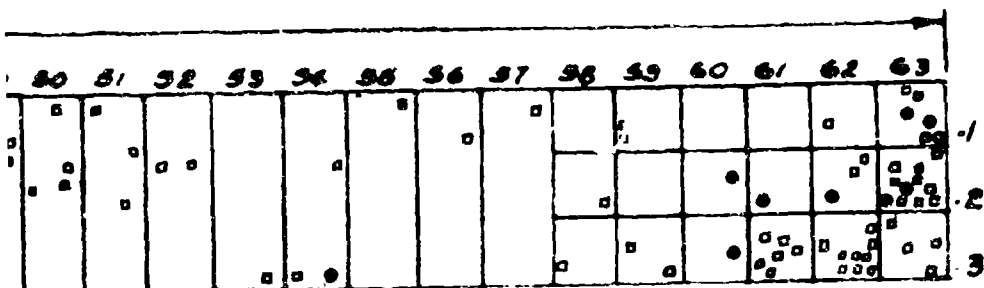
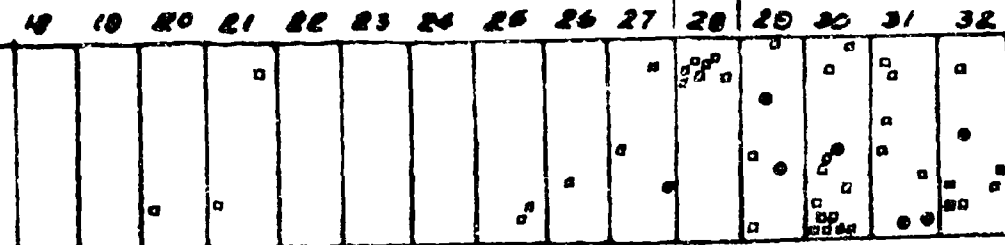
CONFIDENTIAL

130° ARC

30"

15"

2



ED VERTICALLY.

# RANGE OPERATIONS SECTION

LAYOUT OF PANELS  
FOR  
NUMBER AND DISTRIBUTION  
OF FRAGMENTS  
(60 FT. RADIUS)

ABERDEEN PROVING GROUND, MD.  
OCT. 27, 1944  
APG 11876-14 PR

27B

TESTING REPORT NO. B-11822  
ENCLOSURE 3

ROUND NO. 15

24 April 1953

SHELL, HE, 100mm, Soviet  
MODEL, CP - 421K, (TUT)

SHELL PARTIAL

DATA

1  
0.05  
0.05  
0.05  
0.05  
0.05

DATA

1  
0.05

DATA

1.0

0.05

Weight of Shell w/o Comp. - 30.00 lbs.  
No. 1 - 30.00 lbs.

Distance from Shell to the center of the 1.00 ft. hole in flesh target - 22.67 ft.

Shell before impact - 1.00 ft. hole in flesh target.

Recoiled and their range, time and velocity are shown in  
APPENDIX.

CONFIDENTIAL



### FRAGMENT VELOCITY DATA

Test of Shell, HE, Soviet, 122mm .TNT

### Side Recovery Box Data

Proof Director Mr. O. L. Rogers

Date Fired 24 April 1953

Distance from detonation point to target 22.67 feet. Found No. 15

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
1	3		17	N.R.		33	N.R.	
2	N.R.		18	1	2781	34	25	
3	5	2997	19	54	3245	35	433	2076
4	24		20	22	3115	36	183	2105
5	277	3245	21	180	2257	37	173	2105
6	27		22	2	2938	38	744	2257
7	4		23	24	3115	39	N.P.	2938
8	N.P.	3245	24	586	3313	40	2	
9	4		25	24	3313	41	N.P.	
10	3		26	04		42	N.P.	
11	N.R.	3054	27	60	3513	43	517(2)	2105
12	316	3115	28	2	3313	44	60	2022
13	13		29	N.R.	3245	45	3	
14	82	3386	30	24	2995	46	50	
15	11	3313	31	67(2)	3178	47	N.R.	
16	183	3313	32	52		48	N.P.	

Average velocity 2932 ft/sec.

NV - no velocity recorded.

NR - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than  $\pm \frac{4.2}{2} \%$  for the highest velocity and  $\pm \frac{3.3}{1} \%$  for the lowest velocity.

Sheet 4 of 25

**SECRET**

Side Recovery Box Data

Date Fired 24 April 1953

feet. Round No. 15

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
49	1		65	51	2639	81	23	3115
50	N.R.		66	18		82	0+	2938
51	N.R.		67	4		83	3	
52	1		68	1		84	1	
53	122		69	9		85	N.R.	
54	22	2371	70	2		86	517(2)	3241
55	N.R.		71	3				
56	2		72	32				
57	4		73	96				
58	N.R.		74	548(2)				
59	82		75	7				
60	823(2)		76	N.R.	3313			
61	59		77	15				
62	41		78	1651(2)	3245			
63	8		79	62	3054			
64	136		80	N.R.	3178			

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than +  $\frac{4.2}{2}$  % for the highest velocity and +  $\frac{3.3}{2}$  % for the lowest velocity.

**CONFIDENTIAL** 3

CONFIDENTIAL

B-1182

ORD 6-737 18 FEB 48  
FORMERLY SPOTZ-P-281

## PENETRATIONS OF SHELLS IN PANELS

DATE 24 Apr 53

PENETRATIONS OF SHELL 122mm, OF-471 LOADED TNT

IN PANELS WITH RACE OF Soviet 30' AND FEET

FILING RECORD NUMBER

PRIORITY NUMBER

XXXXXXXXXX Sheet 1 of 18

XXXXXXXXXX Round No. 15

FILING NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
1.1			1	1	1
Total					1
3.1			1	1	1
Total					1
4.1			2	1	2
			2	1	1
Total					2
4.4			2	1	1
Total					1
4.5			1	1	1
Total					1
4.6			1	1	2
Total					1
5.2			1	1	1
			1	1	1
			2	1	3
Total					3
5.3			1	1	1
Total					1
5.6			1	1	3
Total					1
6.4	1	1			
Total		1			

CONFIDENTIAL

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
6.5	1	1	2	1	2
Total		1			1
7			1	1	1
			1	1	2
			1	1	3
Total					3
8			1	1	2
			2	1	3
			1	1	4
Total					3
9			2	2	2
			1	1	2
			2	1	2
			6	9	3
Total					4
10			1	1	2
			1	1	2
Total					2
11			2	2	5
Total					1
13			4	3	2
			1	1	2
			1	1	3
Total					3

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13-11922

OROS-727-18 FEB 48  
FORMERLY SPOTZ-F-201

**PENETRATIONS OF SHELLS IN PANELS**

DATE 24 Apr 53
FIRING RECORD NUMBER
PRIORITY NUMBER
XXXXXX Sheet 2 of 18
XXXXXX Round No. 15
POCKET NUMBER

PENETRATIONS OF SHELL 122mm, OF-471 LOADED TNT  
Soviet 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
14			3	2	2
Total					1
15			2	1	5
Total					1
16	2	1	2	2	4
			4	2	3
Total		1			2
17			2	2	3
			2	1	2
			2	1	3
			2	1	7
			3	2	9
			4	1	11
			4	2	4
			1	1	4
Total					8
18			1	1	5
			1	1	2
			1	1	3
			1	1	1
			4	2	8
			1	1	1
			2	1	4
Total					7
19			1	1	2
			2	2	2
Total					2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
20			1	1	2
			2	1	3
			4	2	2
			20	8	5
Total					4
22	2	1	4	1	7
			2	1	9
			1	1	7
			1	1	1
Total		1			4
23			1	1	1
			1	1	3
Total					2
24			3	1	8
			1	1	2
Total					2
25	3	3	2	2	4
	7	5	1	1	2
	7	3	3	2	4
	11	9			
Total		4			3
26	3	3	2	2	2
	8	6	1	1	2
			2	2	2
			2	1	1
			1	1	1
Total		2			5

ORDG-737 19 FEB 48  
FORMERLY SPOTZ-F-201

# PENETRATIONS OF SHELLS IN PANELS

**CONFIDENTIAL**

LOT NUMBER

DATE 24 Apr 53

FIRING RANGE NUMBER

PRIORITY NUMBER

XXXXXXXX Round No. 15

XXXXXXXX Sheet 3 of 18

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, OF-471 LOADED TNT

Soviet

IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
27	4	2	1	1	3
	5	2	1	1	2
			1	1	3
			2	2	7
			2	1	6
			4	2	7
			3	2	4
			4	3	3
			1	1	1
			2	2	10
Total		2			10
28	7	4	2	1	4
	3	3	3	3	7
	8	5	2	1	2
	4	3	1	1	2
	4	2	1	1	3
	6	3	1	1	1
	5	2	2	1	2
	12	4	3	2	4
	4	3	2	1	1
			3	3	7
Total		9			10
29	22	6	1	1	2
	4	2	1	1	4
	16	6	3	2	10
	12	4	1	1	1
	8	3	2	1	4
	36	9	3	1	5
	4	4	1	1	1
	7	5	1	1	1
	7	2	1	1	5
	14	5			

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
29	16	5			
	10	7			
Total		12			9
30	3	3	2	1	3
	7	4	1	1	4
	3	2	1	1	4
	12	5	2	1	2
	4	4	1	1	2
	20	15	2	2	7
	12	4	2	2	2
	5	3			
	3	2			
	16	4			
	32	10			
	20	8			
	12	8			
	25	24			
	7	2			
	3	2			
Total		16			7
31	4	3	2	1	1
	7	5	2	2	4
	21	7	5	2	3
	3	3	1	1	3
	16	9	2	1	7
			1	1	2
			1	1	2
			1	1	3
Total		5			8

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B-11821

CRDGC-737 10 FEB 46  
FORMERLY SPOT 7-291

**PENETRATION OF SHELLS IN PANELS**

TEST NUMBER

DATE 24 Apr 60

FIRING NO NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, OF-471 LOADED TNT

XXXXXXXXXX Round No. 15

XXXXXXXXXX Sheet 4 of 18

Soviet

IN PANELS WITH RADIUS OF

30'

AND

FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
32	3	3	3	1	7
	6	6	3	2	4
	9	8	1	1	2
	8	2	1	1	3
	6	3	3	1	2
	2	1	3	1	6
	20	8	3	1	3
	6	3	2	1	3
	6	4	1	1	2
			1	1	1
			1	1	1
			2	1	1
			3	2	5
			2	2	5
			4	2	2
Total		9			15
33	4	3	4	2	3
	7	7	1	1	1
	32	12	1	1	2
	14	7	1	1	3
	8	6	3	1	2
	7	3	4	4	3
	3	3	1	1	1
	24	7	1	1	1
	4	3	1	1	1
	7	3	2	1	2
	4	4	4	2	10
	17	8	2	2	5
	7	5	2	1	1
	9	5	2	2	3
	6	3	1	1	4
	9	4	1	1	2
	7	5	2	2	5

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
33	48	14	1	1	2
	2	2			
Total		19			18
34	21	10	1	1	6
	8	7	1	1	2
	5	3	2	2	5
	4	2	1	1	1
	15	7	2	1	8
	6	4	3	1	6
	32	14	1	1	2
	1	1	5	3	6
	42	8	1	1	1
	64	16	2	1	6
	33	8			
	12	4			
	4	4			
Total		14			10
35	6	3	1	1	2
	3	1	1	1	2
	12	8	1	1	3
	4	3	3	1	1
	17	9	4	1	4
	17	6	3	1	2
	42	12	2	2	1
	4	5	3	1	5
	3	1	1	1	1
	12	5	1	1	1
	15	9	5	1	3
	18	11	1	1	1
	12	7	1	1	2
	5	4	2	2	5

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ORD 98-757 19 FEB 48  
FORMERLY SPOTZ-F-281

# CONFIDENTIAL PENETRATIONS OF SHELLS IN PANELS

LOT NO.

FIRING, ROUND NUMBER

PRIORITY NUMBER

DATE 24 Apr 53

PENETRATIONS OF SHELL 122mm, OF-471

LOADED TNT

Soviet

XXXXXXXXXX Sheet 5 of 18

XXXXXXXXXX Round No. 15

IN PANELS WITH RADII OF

301

AND

FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
35	7	3	1	1	1
	11	7	3	2	7
	16	9	2	1	1
	8	2	4	2	7
	7	3	5	4	5
	32	16	3	1	3
	8	2	1	1	4
	2	2	2	2	2
			1	1	3
			1	1	3
			1	1	1
			1	1	3
			1	1	3
			1	1	2
			2	1	3
			1	1	1
Total		22			30
36	26	10	1	1	2
	19	9	1	1	4
	5	3	6	3	3
	5	3	1	1	2
	14	5	2	1	3
	25	8	5	2	8
	7	4	3	1	4
	4	2	3	1	2
	19	7	1	1	2
	8	6	1	1	1
	7	3	1	1	1
	31	8			
	7	7			
	8	4			
	11	7			
	24	11			

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
36	7	4			
	5	2			
	4	4			
	26	12			
Total		20			11
37	5	3	3	2	4
	12	4	1	1	2
	17	5	6	1	3
	4	4	1	1	2
			1	1	1
			1	1	2
			2	1	2
			4	4	4
			1	1	1
			2	2	2
			1	1	2
Total		4			11
38			2	1	2
			1	1	1
			2	2	2
			2	2	3
			1	1	2
			3	1	3
			2	1	2
Total					7
39	12	8	2	1	2
	18	7	3	2	5
Total		2			2

CONFIDENTIAL

PAID: 24 Apr 53

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm. OF-471 . LOADED TNT

Soviet

IN PANELS WITH RADIUS OF 30" AND FEET

FIRING RECORD NUMBER

PRIORITY NUMBER

~~XXXXXXXXXX~~ Sheet 6 of 18

~~XXXXXXXXXX~~ Round No. 15

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
40	16	12	1	1	1
	12	5	3	1	2
			2	2	2
			3	3	5
			3	2	2
			1	1	1
Total		2			6
41	4	3	1	1	1
	14	12	2	1	2
	13	12	1	1	3
Total		3			3
42	5	3	4	3	7
			2	1	1
			1	1	1
			2	1	1
			1	1	2
			2	1	3
Total		1			6
43			2	1	5
			2	1	4
			1	1	1
			3	2	3
			2	2	2
Total					5
44	6	4	2	1	1
			4	2	7
			1	1	1
			5	3	3
			3	3	2
			2	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			4	3	5
			1	1	4
			2	1	2
			2	1	1
			1	1	2
			2	2	2
			1	1	2
			3	2	2
Total		1			14
45	5	4	3	2	6
	4	4	2	1	2
			4	3	2
			3	2	2
			2	2	1
			3	1	1
			5	3	2
			1	1	1
			1	1	1
			2	2	1
			1	1	2
			1	1	2
Total		2			12
46			3	2	3
			2	1	1
			2	1	1
			3	2	1
			1	1	2
			1	1	3
			1	1	2
			4	4	4
Total					8



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R-11722

ORD 86-757 18 FEB 48  
FORMERLY SPOTZ-F-201

## PENETRATIONS OF SHELLS IN PANELS

SHOT NO.

DATE 24 Apr 53

FIRING RECORD NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122MM, OF-471

LOADED TNT

Sheet 7 of 18

Soviet  
IN PANELS WITH RADIUS OF 30'

AND

FEET

Round No. 15

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
47	8	4	4	1	2
			1	1	1
			2	2	2
			1	1	1
			1	1	1
			4	3	2
			1	1	1
			2	1	1
Total		1			8
48			2	2	2
			1	1	1
			5	1	2
			1	1	1
			2	1	1
			2	1	1
			1	1	1
			3	3	7
			1	1	2
			1	1	2
			1	1	1
			2	2	3
			1	1	1
			1	1	1
			3	2	6
			4	2	2
			2	2	1
Total					17
49			1	1	2
			3	3	3
			3	2	5
			2	1	1
			2	2	4

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	2	3
			2	1	1
			3	2	2
			2	1	1
			2	2	2
			1		2
			1	1	2
			2	1	2
			2	2	2
Total					14
50	14	7	2	1	2
			1	1	1
			3	3	3
			1	1	1
			2	2	1
			2	2	3
			1	1	1
			2	1	1
			3	2	5
			1	1	1
			1	1	1
			1	1	1
			1	1	2
			1	1	1
			2	2	3
			1	1	1
			2	1	2
Total		1			17
51	9	5	1	1	1
	5	3	2	2	2
			2	2	3
			3	3	2

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# PENETRATIONS OF SHELLS IN PANELS

12-11874

DATE 24 Apr 53

ASST. NO. 1

EXPERIMENTAL NUMBER

EXPERIMENTAL NUMBER

Round No. 15

Sheet 8 of 18

PENETRATIONS OF SHELL 122mm, OF-471 LOADED TNT

Soviet

IN PANELS WITH RADII OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
51 cont			1	1	2
			3	2	6
			2	2	1
			3	1	4
			4	4	3
			1	1	1
			3	2	2
			1	1	1
			2	2	2
			5	2	3
			3	1	1
			1	1	3
			1	1	1
			2	2	1
			2	1	1
			1	1	1
			2	1	1
			1	1	1
			1	1	2
			2	1	1
			1	1	1
			1	1	1
			2	2	1
			1	1	1
			3	1	2
Total	2				29
52	4	3	2	2	3
			2	2	2
			2	1	1
			2	1	1
			2	1	1
			2	2	2
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			3	3	5
			1	1	1
			1	1	1
			6	4	6
			2	2	2
			2	1	1
			5	5	4
			1	1	1
			2	2	2
			1	1	2
			1	1	1
			1	1	1
			5	2	5
			2	1	3
			1	1	1
Total		1			22
53	14	8	1	1	3
	4	3	2	2	2
			2	2	2
			2	2	2
			2	2	6
			6	2	6
			1	1	2
			2	2	2
			1	1	1
			3	2	4
			1	1	2
			2	1	2
			1	1	1
			1	1	2
			5	4	3
			2	2	1
Total		2			16

CONFIDENTIAL

ORD 96-757 18 FEB 48  
FORMERLY SPOTZ-7-291

# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 24 Apr 53

FIRING RECORD NUMBER

PRIORITY NUMBER

~~XXXXXXXXXX~~ Sheet 9 of 18

~~XXXXXXXXXX~~ Round No. 15

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, OF-4/1 LOADED TNT

IN PANELS WITH RADIUS OF 30" AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
54	8	7	2	1	3				4	2	2
	3	2	3	1	6				1	1	2
	3	1	1	1	1				5	2	5
			1	1	1	Total					8
			2	2	2						
			1	1	2	56			1	1	1
			2	1	1				2	2	1
			3	1	2				6	3	6
			1	1	1				1	1	1
			1	1	2				3	2	3
			1	1	1				2	1	1
			3	1	1	Total					6
			1	1	2						
			1	1	2	57			1	1	2
			2	2	11				2	1	2
			2	2	1				2	2	2
			4	3	2				1	1	1
			3	1	7	Total					4
			4	3	3						
			1	1	1	58.1			1	1	1
			1	1	2				4	2	2
			1	1	1				1	1	2
			1	1	2	Total					3
			1	1	1						
			3	3	5	58.3			1	1	1
			2	2	1	Total					1
			2	1	2						
Total		3			27	58.4			4	2	6
						Total					1
55			3	2	2						
			1	1	1	58.5			2	1	2
			1	1	2				1	1	3
			2	2	3				1	1	1
			1	1	2				3	2	8

PENETRATIONS OF SHELLS IN PANELS

LOT NUM

DATE 24 Apr 53

FIRING RECORD NUMBER

PRIORITY NUMBER

Sheet 10 of 18

Round No. 15

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, OF-471 LOADED TNT

Soviet- 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
58.5					
Total					4
59.1			1	1	2
Total					1
59.2	1	1	1	1	1
			2	2	2
Total		1			2
59.3	5	3	3	2	4
			1	1	1
Total		1			2
59.4			3	2	9
Total					1
59.5			1	1	1
			1	1	1
Total					2
59.6	9	5	1	1	2
Total		1			1
60.1			2	1	2
			1	1	1
			2	1	1
Total					3
60.2	22	14	2	2	3
			2	2	2
			1	1	2
			1	1	2
Total		1			4

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
60.3	5	2	4	2	5
	9	7	3	1	3
			1	1	2
Total		2			3
60.4			1	1	2
			1	1	1
Total					2
60.6			2	1	2
Total					1
61.1	5	4	1	1	1
Total		1			1
61.2			1	1	1
			5	4	9
			1	1	2
			1	1	1
Total					4
61.3	7	5	2	2	2
			2	2	2
Total		1			2
61.4	21	20	3	1	2
			1	1	2
			1	1	2
Total		1			3
61.5			1	1	3
			6	2	6
Total					2

# PENETRATIONS OF SHELLS IN PANELS

DATE 24 Apr 55

PENETRATIONS OF SHELL 122mm, OF-471 LOADED TNT  
IN PANELS WITH Soviet 30' AND FEET

XXXXXXXXX Sheet 11 of 18  
XXXXXXXXX Round No. 15  
ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
51.6	11	6	3	2	3
Total		1			1
62.1			5	1	2
			4	3	2
			1	1	1
Total					3
62.2	2	1	1	1	2
			3	3	7
			1	1	1
Total		1			3
62.3	15	9	4	2	9
	25	3	1	1	2
	10	7	1	1	1
			1	1	2
Total		3			4
62.4			2	1	3
			1	1	2
Total					2
62.5	12	10	4	2	10
			2	2	2
			1	1	1
			1	1	1
			5	2	2
Total		1			5
62.6	3	3	3	2	7
	12	8	5	3	2
	24	10	2	2	1
Total		3			3

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
63.1	5	3	3	1	2
			1	1	1
Total		1			2
63.2			3	2	1
			2	2	2
			3	2	3
			1	1	2
			7	7	3
			1	1	1
Total					6
63.3	23	8	1	1	1
	7	2	2	1	2
			3	2	1
			1	1	2
			1	1	1
			1	1	1
			1	1	1
			2	2	7
Total		2			9
63.4	6	5	6	2	5
	1+	4	2	2	2
			1	1	1
			6	3	8
			2	1	1
Total		2			5
63.5	30	16	1	1	1
			1	1	1
			1	1	1
			1	1	1

### PENETRATION OF SHELLS IN PANELS

LOT 11.4

DATE 24 Apr 53

FIRING RECORD NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm. OF -471 LOADED TNT

XXXXXXXXX Sheet 12 of 18

Round No. 15

ROCKET NUMBER

IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
63.5					
Total		1			4
63.6			1	1	3
			2	2	2
Total					2
TOTALS					
50' Radius		187			532

CONFIDENTIAL

20

ORDG-737 18 FEB 48  
FORMERLY SPOTZ-F-201

# PENETRATIONS OF SHELLS IN PANELS

DATE 24 Apr 53

PENETRATIONS OF SHELL 122mm, OF-471 LOADED TNT  
Soviet  
IN PANELS WITH RADII OF 60' AND FEET

FIRING RECORD NUMBER  
PRIORITY NUMBER  
Sheet 13 of 18  
Round No. 15

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
1.1			4	1	2
Total					1
1.2			3	1	1
			1	1	1
Total					2
2.2			2	1	1
			1	1	1
			1	1	1
Total					3
2.3			1	1	2
Total					1
3.1			1	1	1
Total					1
3.2			2	1	3
			1	1	1
			1	1	1
			1	1	1
			1	1	2
Total					5
3.3			1	1	2
			1	1	1
			1	1	1
Total					3
4.2			5	2	1
Total					1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
4.3			1	1	1
Total					1
6.2			1	1	1
			1	1	1
			2	1	1
Total					3
7			4	1	1
Total					1
9			4	3	3
			2	2	1
			1	1	1
			1	1	1
Total					4
10			1	1	2
Total					1
16			3	1	2
			2	1	1
Total					2
17			1	1	1
Total					1
18			2	1	1
Total					1
20			1	1	1
			2	1	2
Total					2

ORDBG-737 10 FEB 48  
FORMERLY SPOTZ-P-251

# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 24 Apr 58

STRIKING RECORD NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, OF-471 LOADED TNT

Sheet 14 of 18

IN PANELS WITH RADIUS OF

60'

AND

FEET

ROCKET NUMBER

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
21			7	2	1
Total					1
23			1	1	2
			4	2	3
Total					2
25			3	2	2
			2	1	2
			1	1	1
Total					3
26			3	2	2
			1	1	1
			4	3	2
			2	1	1
			3	2	1
Total					5
27	13	2	5	3	5
			4	2	1
			4	2	3
			3	2	2
			4	3	6
			5	3	2
			4	3	4
			2	2	2
Total		1			8
28	9	6	1	1	1
			3	2	5
			4	1	1
Total		1			3

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
29	36	6	5	3	2
			3	2	2
			2	2	2
Total		1			3
30	3	2	2	1	1
	13	3	3	1	1
	8	4	5	4	6
	10	5	2	1	2
	10	4	3	2	2
			3	2	1
Total		5			6
31	35	7	4	2	2
	7	4	6	2	1
	22	7	1	1	1
	7	3			
	12	9			
	43	7			
	3	6			
	30	11			
	4	3			
Total		9			3
32	4	3	3	2	2
	9	4	1	1	1
			4	2	2
			3	2	3
			2	1	3
Total		2			5
33	10	5	2	1	1
	48	10	3	2	1
	26	7	4	3	2

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# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 24 Apr 53

FIRING RECORD NUMBER

PRIORITY NUMBER

Sheet 15 of 18

Round No. 15

BUCKET NUMBER

PENETRATIONS OF SHELL 122mm, OF-471 LOADED TNT

Soviet IN PANELS WITH RADIUS OF 60' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	8	3	8	3	5
	9	7	5	4	3
	3	2	1	1	1
	6	5	3	2	1
	8	6	3	1	1
	7	5	16	5	4
Total		9			9
34	62	16	2	2	1
	15	9	3	1	2
	10	5	2	2	2
	16	13	2	1	1
	5	4	3	1	2
	5	3	1	1	1
	14	9	5	3	5
	7	4	2	2	6
	18	14			
	24	8			
Total		10			8
35	20	8	2	2	3
	24	11	5	3	6
	8	6	3	2	1
	9	6	8	2	3
	5	4	1	1	1
	7	3	2	2	2
	8	7	4	3	6
	4	4			
	23	8			
	32	27			
	21	9			
	8	5			
Total		12			7

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PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
36	10	4	3	2	1
	12	5	4	2	3
	8	7	4	4	6
	15	9	4	2	2
	9	4	4	2	3
	12	5	2	1	2
			4	3	2
Total		6			7
37	16	6	1	1	1
			3	2	2
			4	2	1
			3	1	1
			3	1	1
Total		1			5
38	12	10	12	10	6
	10	5	4	2	2
			3	2	3
			1	1	1
			8	3	10
Total		2			5
39	9	5	4	3	4
			12	8	6
			4	3	7
			5	3	2
Total		1			4
40	12	11	3	2	2
	11	6	1	1	1
	8	4	3	3	4
	12	10			2/5
Total		4			3

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B-11822

ORDG-787 16 FEB 46  
FORMERLY SPOTZ-F-281

## PENETRATIONS OF SHELLS IN PANELS

FIRE NUMBER

DATE 24 Apr 53

FIRING RECORD NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, OF-471 LOADED TNT  
Soviet

Sheet 16 of 18

Round No. 15

IN PANELS WITH RADIUS OF 60' AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
41	8	5	4	2	2				4	2	3
			7	4	7				3	2	2
Total		1			2	Total		1			6
42			5	4	4	49	6	4	3	2	1
Total					1				2	1	1
						Total		1			2
43			4	2	3						
			4	3	2	50	10	9	3	2	2
			5	4	2		7	4	4	3	3
Total					3				3	2	2
						Total		2			3
44			1	1	1						
			2	1	2	51	9	3	5	2	3
			2	1	1		3	5	4	2	3
			5	4	2				2	1	2
Total					4	Total		2			3
45			5	3	1	52			5	4	4
			1	1	1				3	2	2
			2	1	1				5	1	6
			5	4	2				2	2	1
Total					4	Total			2	1	2
											5
46			4	2	2						
Total					1	53			2	3	2
									3	3	3
47	9	5	3		1				5	2	2
Total		1			1				2	2	2
						Total					4
48	12	9	2	1	1						
			2	2	1	54			7	3	2
			4	3	1				1	1	1
			4	2		Total					2

# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 24 Apr 53

FIRING RECORD NUMBER

PRIORITY NUMBER

~~XXXXXXXXXX~~ Sheet 17 of 18

~~XXXXXXXXXX~~ Round No. 15

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, OF-471 LOADED TNT

IN PANELS WITH RADIUS OF Soviet 60' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
55	12	6	5	5	7
			2	1	4
Total		1			2
57			4	4	2
Total					1
58.1	8	4			
	4	4			
Total		2			
59.1	10	7	5	4	4
Total		1			1
59.2			4	2	2
Total					1
59.3	5	3			
Total		1			
60.3			4	3	2
			2	1	2
			1	1	1
			5	3	3
			4	2	3
Total					5
61.1	23	14	1	1	1
			2	1	1
			2	1	1
			1	1	1
Total		1			4

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
61.2	7	5			
Total		1			
61.3	14	10	2	1	2
	26	16			
	10	10			
Total		3			1
62.1	10	6	2	1	2
	14	10			
Total		2			1
62.2			2	1	1
			5	3	2
			2	1	2
			4	2	2
			1	1	1
Total					5
62.3			2	1	1
			2	1	2
Total					2
63.1	6	3	3	2	9
	6	3	2	2	2
	12	9	9	2	3
	16	9	1	1	1
	20	17			
	21	14			
Total		6			4

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## PENETRATIONS OF SHELLS IN PANELS

107 1944

DATE 24 Apr 53

FIRING RECORD NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm. OF-471 LOADED TNT

~~XXXXXXXX~~ Sheet 18 of 18

~~XXXXXXXX~~ Round No. 15

IN PANELS WITH RADII OF

501

AND

F E E T

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH

PANEL NUMBERS	REDUCTIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH

63.2			2	2	3
------	--	--	---	---	---

Total					1
-------	--	--	--	--	---

63.3	10	5			
------	----	---	--	--	--

8	6			
---	---	--	--	--

18	7			
----	---	--	--	--

9	9			
---	---	--	--	--

Total	4			
-------	---	--	--	--

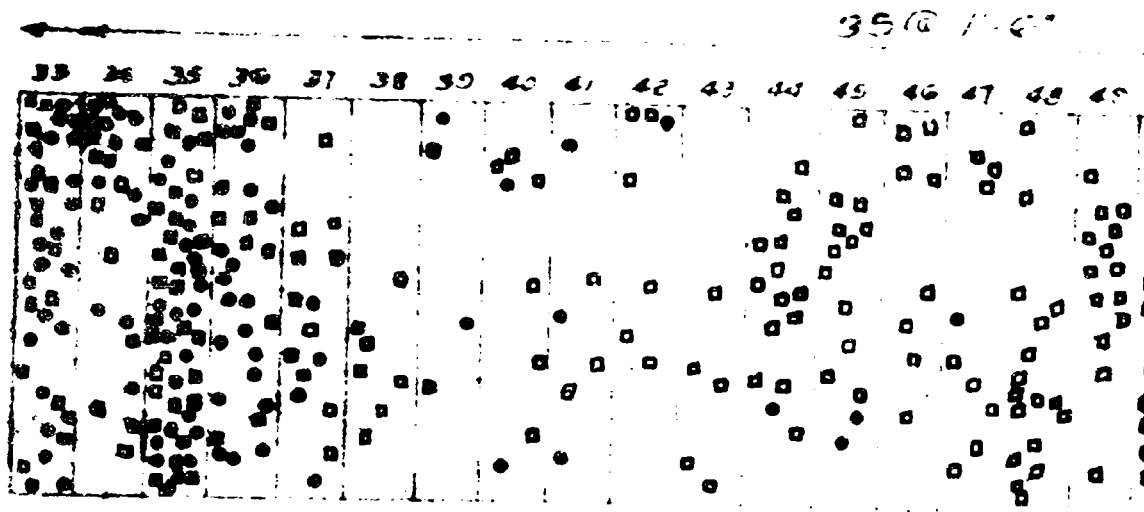
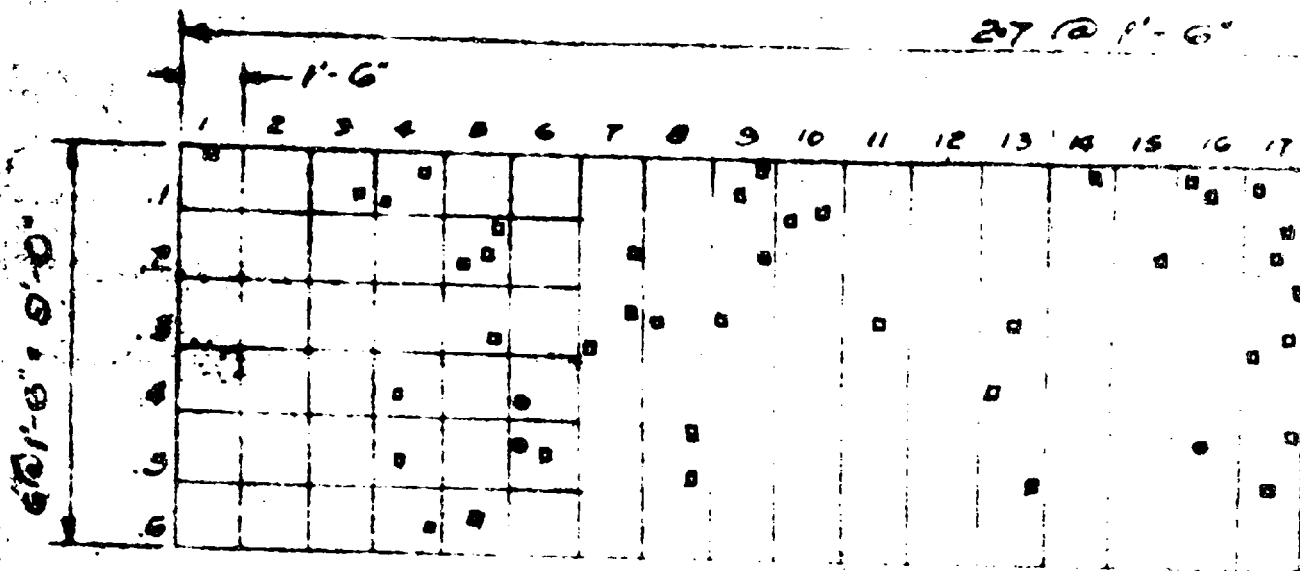
**TOTALS**

60' Radius	94		189
------------	----	--	-----

~~CONFIDENTIAL~~

# CONFIDENTIAL PANEL A

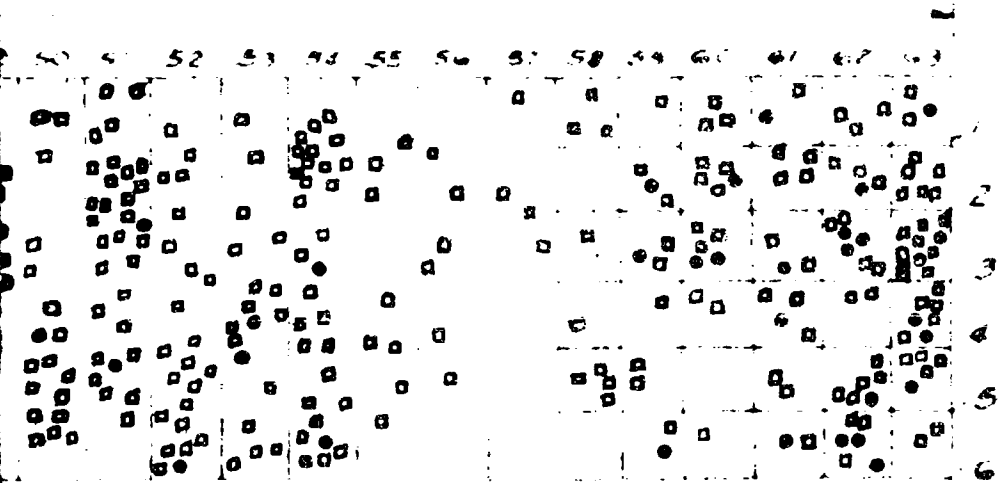
## 30 FT RADIUS



1" NO. 3 PINE BOARDS (DRESSED) PLACED  
 DATE 4-24-53 RD. NO. 15 PERFORATION  
 SHELL, 122 MM, SOVIET PENETRATING  
 SUSPENSION: HORIZONTAL

CONFIDENTIAL

180° ARC



2

ED VERTICALLY

IONS 187  
IONS 532

RANGE OPERATIONS SECTION

LAYOUT OF PANELS  
FOR

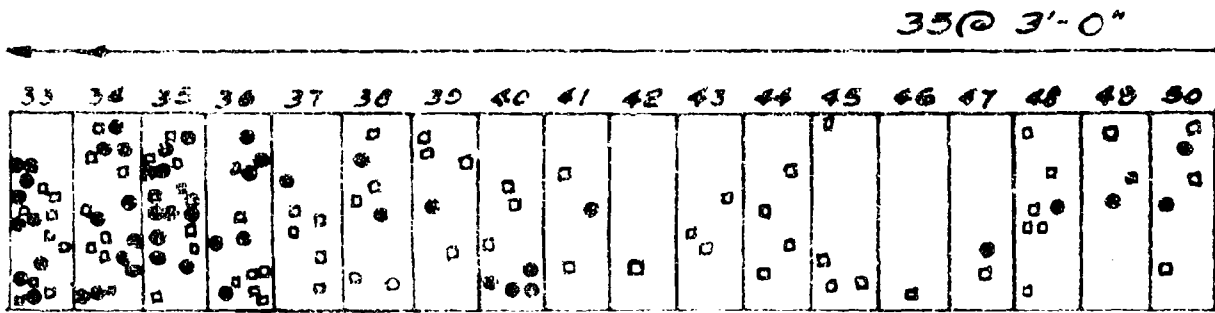
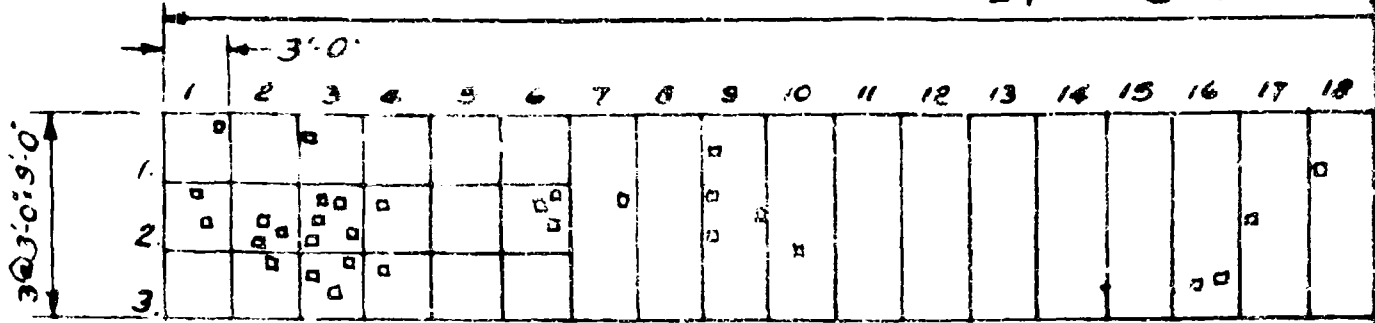
NUMBER AND DISTRIBUTION  
OF FRAGMENTS  
(30 FT RADIUS)

ABOVE THE GROUND

NOV 27 1966

REF 1576-15 PR

**PANEL B**  
60 FT. RADIUS 180  
27 @ 3'-0"

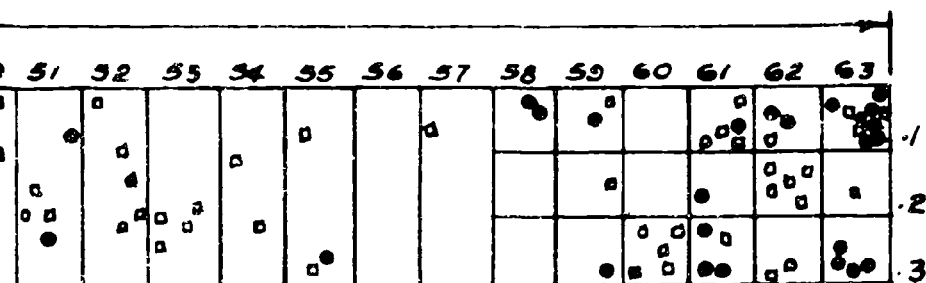


1" NO. 3 PINE BOARDS (DRESSED) PLACED

DATE: 4-24-53 RD. NO. 15  
SHELL, 122 MM. SOVIET  
SUSPENSION: HORIZONTAL

PERFORATI  
PENETRATI

CONFIDENTIAL



2

IONS 189

RANGE OPERATIONS SECTION

LAYOUT OF PANELS  
FOR  
NUMBER AND DISTRIBUTION  
OF FRAGMENTS  
(60 FT. RADIUS)

ABERDEEN PROVING GROUND, MD.

OCT. 27, 1944

APG 11876-14 PB



CONFIDENTIAL - SECURITY INFORMATION  
EXCLUDED FROM 3

21 May 1953

REPORT NO. 16

SHELL, 10, 100, 100, 100  
SHELL, 10, 100, 100, 100

SPREAD DATA

SPREAD

130  
124-13  
127  
127

SPREAD

127  
127 - 127

SPREAD

127  
127

Weight of Shell w/o Components - 14.71 lbs.  
w/ Components - 14.71 lbs.

Distance from Shell to the center of the 0.000" diameter flash target - 22.47 in.

Shell before firing is 100 in. in air. From 100 in. to 100 in.

Recovered fragments with their respective weights and velocities are shown in  
and attached photo. 127 in.

**CONFIDENTIAL**

[REDACTED]

# FRAGMENT VELOCITY DATA

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Test of Shell, HE, Soviet, 122-mm. TNT Side Recovery Box Data

Proof Director Mr. C. L. Rogers Date Fired 21 May 1953

Distance from detonation point to target 22.27 feet. Round No. 16

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
1	310	2854	17	114		33	N.R.	3393
2	416	2905	18	1		34	N.R.	
3	74	2905	19	459	3274	35	N.R.	
4	13	2957	20	22		36	N.R.	
5	83	2465	21	9	3127	37	60	3544
6	30		22	N.R.	3393	38	35	
7	653(2)	2957	23	21	3393	39	321	
8	7		24	42	3190	40	22	
9	1		25	N.R.		41	9	
10	N.R.		26	14		42	10	
11	11		27	112	3323	43	6	
12	N.R.	3127	28	35	3009	44	216	2093
13	17	3274	29	1		45	34	
14	N.R.		30	16		46	N.R.	
15	102		31	N.R.	2093	47	406	1969
16	140		32	8		48	44	2276

Average velocity 2985 ft/sec.

NV - no velocity recorded.

NR - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than  $\pm$  4.2 % for the highest velocity and  $\pm$  3.2 % for the lowest velocity. 1 2

Sheet 6 of 26

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# FRAGMENT VELOCITY DATA

Test of Shell, HE, Soviet, 122mm

Side Recovery Box Data

Proof Director Mr. O. L. Rogers

Date Fired 21 May 1953

Distance from detonation point to target 22.67

feet. Round No. 16

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
49	0+		65	447				
50	N.R.		66	N.R.				
51	N.R.		67	N.R.				
52	1		68	7				
53	N.R.		69	N.R.	3190			
54	13		70	N.R.	3190			
55	12		71	178	3190			
56	N.R.		72	N.R.				
57	56		73	1	3009			
58	N.R.	3067	74	99	3067			
59	806		75	3				
60	24		76	3				
61	10		77	N.R.				
62	22		78	184	3127			
63	533	3190	79	N.R.				
64	930(3)		80	81(2)				

Average velocity 2985 ft/sec.

NV - no velocity recorded.

NR - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than + 4.2 % for the highest velocity and + 3.2 % for the lowest velocity.

Sheet 2 of 28

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51

ORDER 121 10 FEB 48  
FORMERLY SPOT-7-201

# PENETRATIONS OF SHELLS IN PANELS

21 May 50

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT

Soviet

IN PANELS WITH RADIUS OF

30'

AND

FEET

PRIORITY NUMBER

XXXXXXXXXX Sheet 1 of 11

XXXXXXXXXX Round No. 16

POCKET NUMBER

PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
2.2			5	1	2
Total					1
3.3			1	1	1
Total					1
4.3			4	2	3
Total					1
5.3			1	1	1
Total					1
8			7	3	7
Total					1
11			3	2	2
Total					1
13			3	3	7
Total					1
14			3	2	1
Total					1
18			2	2	3
Total					1
19			2	2	3
Total					1
20			1	1	1
Total					1

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PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
22			2	1	1
Total					1
23			2	1	7
Total					1
24			1	1	1
Total					1
25			4	3	7
Total			1	1	1
26	7	3	7	2	8
Total		1			1
27	12	5	3	2	3
			2	1	2
			3	2	6
			1	1	1
			4	2	2
			6	2	4
Total		1			6
28	5	4	1	1	1
	18	6	3	2	5
	10	6	1	1	1
	5	4			
Total		4			3
29	28	5	2	1	1
	16	6	2	1	1
	40	8	3	1	1
	4	3			

# PENETRATIONS OF SHELLS IN PANELS

21 May 50

122mm, OF-471N LOADED TNT  
Soviet

XXXXXXX Round No, 16  
XXXXXXX Sheet 2 of 11

30' AND FEET

	PENETRATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
8	3					33	25	11	5	1	6
	5				3		3	2	2	2	2
							46	12	4	1	5
4	3	3	2		7		6	4	4	1	4
6	2	2	1		1		5	5	2	2	2
4	3	4	3		6		54	10	1	1	1
10	4	3	1		2		8	5	3	2	5
22	9	2	1		1		18	8	2	1	1
46	13								3	2	2
8	4								2	1	4
3	2								1	1	1
	8				5	Total		8			11
16	4					34	18	4	3	2	2
2	1						55	9	3	2	5
33	8						9	6	2	1	1
30	7						21	8	1	1	1
6	5						5	3	2	1	1
8	4						11	5	3	2	5
	6						2	2	4	3	5
5	5	2	1		2		26	10	2	1	1
	3	2	2		4		11	4	4	2	4
3	4	2	1		2		16	8	3	2	6
7	3	3	1		1		5	4			
		2	1		2		7	4			
		3	1		2		7	6			
		3	2		6		4	2			
		1	1		2	Total	14	9			
		1	1		4			15			10
		1	1		1	35	21	20	1	1	1
4					10		6	4	13	5	5
							5	3	2	1	1
							33	8	1	1	1



# PENETRATIONS OF SHELLS IN PANELS

DATE: 21 May 53  
PRIORITY:   
XXXXXXXXX Sheet 4 of 11  
XXXXXXXXX Round No. 16  
ROCKET NUMBER:

PENETRATIONS OF SHELL 182mm, CF-471N LOADED TNT  
307160  
IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
42			2	2	1
			3	2	1
Total					2
43			3	1	1
Total					1
44	6	4	2	1	1
			2	1	1
			5	3	2
Total		1			3
45	5	4	3	1	2
	5	4	1	1	1
			3	2	2
			2	1	1
			4	3	2
			1	1	2
			2	1	3
			6	4	7
Total		2			8
46	8	5	5	3	7
			2	1	1
			1	1	1
			1	1	1
			1	1	1
			3	2	3
			3	2	2
			2	1	1
			3	2	2
Total		1			9
47	4	3	1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			5	4	5
			5	3	1
			1	1	1
			5	3	3
			2	1	1
			3	2	1
			3	2	2
			1	1	1
Total		1			9
48	8	6	1	1	1
			1	1	1
			2	1	1
			1	1	1
			2	1	1
			5	4	8
			2	1	1
			1	1	1
Total		1			8
49			1	1	1
			2	2	1
			4	2	3
			3	2	2
			2	1	1
			1	1	1
Total					6
50			5	4	5
			4	3	4
			2	1	1
			2	1	1
			2	1	1
			3	2	1

# PENETRATION OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT  
Soviet

IN PANELS WITH RADII OF 30' AND FEET

REF NO.

FIRING NO.

PRIORITY NUMBER

21 May 53

XXXXXXXXX Sheet 5 of 11

XXXXXXXXX Round No. 18

POCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
50			1	1	1
			1	1	1
			3	3	2
			1	1	1
Total					10
51			1	1	1
			1	1	1
			1	1	1
			2	1	1
			2	1	1
			2	1	1
			2	2	1
			1	1	1
			2	1	1
			3	1	1
			1	1	1
			2	1	2
			2	1	1
Total					13
52	14	12	3	2	4
			5	2	5
			1	1	1
			2	1	1
			3	1	2
			3	2	2
			2	1	1
			3	3	6
			3	2	1
			3	2	1
			1	1	1
			3	1	2
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	1	1
			3	2	2
			3	2	2
			3	3	3
			2	1	1
Total		1			18
53			4	2	2
			1	1	1
			1	1	1
			1	1	1
			1	1	1
			3	3	6
			1	1	1
			2	1	1
			1	1	1
			1	1	1
			2	1	1
			3	2	2
			1	1	1
Total					13
54	12	5	3	2	2
			2	1	1
			2	1	1
			1	1	1
			1	1	1
			1	1	1
			3	2	1
			3	2	2
Total					8

Total

CONFIDENTIAL



ORDG-737 18 FEB 48  
FORMERLY 8702-P-201

# PENETRATIONS OF SHELLS IN PANELS

101-7-10-1

101-7-10-1

21 May 55

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT  
Soviet

IN PANELS WITH RADIUS OF 30' AND FEET

PRIORITY NUMBER

XXXXXXXXX Sheet 6 of 11  
XXXXXXXXX Round No. 16

ROUND NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
55			3	2	1
Total					1
56			1	1	1
			1	1	1
Total					2
57	7	4	1	1	1
			3	2	1
			4	3	3
Total		1			3
58.2			4	1	1
Total					1
58.4			3	2	3
Total					1
58.5	11	6	5	2	2
Total		1			1
59.1			4	1	1
Total					1
59.3	10	6	2	1	1
Total		1			1
60.2	24	17	2	1	1
Total		1			1
60.3			2	2	2
			2	1	1
			3	2	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
Total					3
60.4	5	4	1	1	1
			3	2	1
Total		1			2
60.5	27	12	1	1	1
Total		1			1
60.6	3	2	1	1	1
Total		1			1
61.1	20	9			
Total		1			
61.2			1	1	1
Total					1
61.4			3	1	2
Total					1
61.5	3	2	1	1	1
			3	2	6
			5	3	7
Total		1			3
61.6			5	2	2
			1	1	1
Total					2

ORDG-737 10 FEB 48  
FORMERLY SPOTZ-F-201

# PENETRATIONS OF SHELLS IN PANELS

DATE 21 May 53

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT  
Soviet

IN PANELS WITH RADIUS OF 30' AND FEET

FIRING RECORD NUMBER

PRIORITY NUMBER

Sheet 7 of 11

Round No. 16

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
62.2			2	1	1
			3	2	3
			5	2	3
			1	1	1
Total					4
62.3	7	5	8	2	6
Total		1			1
62.4			1	1	1
Total					1
62.5			1	1	1
			1	1	1
Total					2
63.1			3	2	2
			3	2	4
			1	1	1
Total					3
63.2	6	6	3	1	1
			1	1	1
Total		1			2
63.3	34	6	1	1	1
			1	1	1
Total		1			2
63.4	28	20			
	8	6			
Total		2			

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
63.5			3	1	2
			3	1	2
Total					2
63.6			2	1	1
Total					1
TOTALS					
30' Radius		114			260

CONFIDENTIAL

# PENETRATIONS OF SHELLS IN PANELS

LOT NO. 0000000000 DATE 21 May 55

FIRING NO. 0000000000

PRIORITY NUMBER

XXXXXXXXXX Sheet 8 of 11

XXXXXXXXXX Round No. 16

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT

Soviet

IN PANELS WITH RADIUS OF 60' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
5.1			4	2	4
Total					1
9			4	2	3
Total					1
12			4	2	2
Total					1
17			4	2	2
Total					1
22			2	1	1
Total					1
25	12	5	10	2	4
			5	4	3
Total		1			2
26	5	3	5	1	1
Total		1			1
27			1	1	1
Total					1
28			2	1	1
Total					1
29	15	4	1	1	1
	13	9	12	3	4
			5	3	7
			1	1	1
			1	1	1
			2	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
29			3	1	1
Total		2			7
30	14	4	2	1	3
	14	3	5	3	3
	37	9			
Total		3			2
31	36	13	3	2	1
	5	3	3	2	2
			8	3	4
			2	2	1
			3	1	1
Total		2			5
32	11	5	1	1	1
Total		1			1
33	5	4	5	1	2
	23	9	4	4	4
	22	11	2	1	1
	8	3	3	1	1
			2	1	1
			3	1	1
Total		4			6
34	21	9	5	3	2
	7	3			
	5	4			
	15	6			
	34	9			
Total		5			1

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ORDRG-737 10 FEB 48  
FORMERLY SPOTZ-F-181

# PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT

IN PANELS WITH RANGE OF 60' AND FEET

EST NO.

FIRING NO. NUMBER

PRIORITY NUMBER

DATE 21 May 53

XXXXXXXXXX Sheet 9 of 11

XXXXXXXXXX Round No. 16

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
35	6	6	1	1	1
	5	3	1	1	2
	9	5			
	38	16			
	38	8			
Total		5			2
36	21	13	6	3	7
	16	11	2	1	1
	9	6	7	3	7
	11	6	3	2	2
	28	9	2	1	2
	4	4			
Total		6			5
37	26	12	2	1	1
			4	3	7
			2	2	3
			2	1	1
			1	1	1
Total		1			5
38	14	9	2	1	1
			1	1	1
			2	1	1
			1	1	1
Total		1			4
39	7	4	3	2	3
	7	5	4	3	3
	9	6	2	1	1
			2	2	1
Total		3			4

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
40			7	3	4
			2	1	1
Total					2
41			2	1	7
			2	1	1
			1	1	1
			6	3	2
			1	1	1
			2	2	2
Total					6
42	10	10	3	1	1
			2	2	2
Total		1			2
43			2	1	1
			2	2	2
			1	1	1
Total					3
44	6	4	4	1	1
			2	2	1
			3	1	1
			6	4	2
			2	1	1
Total		1			5
45			4	1	1
			2	1	1
			3	2	1
Total					3

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT  
Soviet

IN PANELS WITH RADIUS OF AND FEET

LIST NUMBER  
FIRING RECORD NUMBER  
PRIORITY NUMBER

DATE 21 May 55

XXXXXXXXXX Sheet 10 of 11

XXXXXXXXXX Round No. 16

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
46			3	2	2
			1	1	1
			2	1	1
Total					3
47			1	1	1
			2	1	1
			1	1	1
			3	2	1
			3	1	1
			1	1	1
Total					6
48			2	1	2
			1	1	1
			2	1	1
			1	1	1
			4	2	3
			3	2	1
Total					6
49			5	2	2
			4	3	2
Total					2
50			3	3	1
			3	2	1
			2	1	1
			2	1	1
			1	1	1
Total					5
51	6	6	2	2	1
			3	1	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			3	2	1
			3	1	2
			1	1	1
Total		1			6
52			3	2	2
			3	2	1
			1	1	1
			1	1	1
			2	1	1
Total					5
53			2	1	1
			3	2	1
			5	2	3
			4	2	1
			4	2	1
			1	1	1
			2	1	1
Total					7
54			3	2	2
			3	1	2
			2	2	1
			3	1	1
			3	1	1
			3	2	4
Total					6
55	11	8	1	1	1
			4	4	2
			3	2	1
			2	1	1

CONFIDENTIAL

ORDNO-737 10 FEB 48  
FORMERLY MPOTZ-F-781

# PENETRATIONS OF SHELLS IN PANELS

DATE 21 May 55

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT  
Soviet

IN PANELS WITH RADIUS OF 60' AND FEET

LET NO. 000000

PRIORITY NUMBER

Sheet 11 of 11

Round No. 16

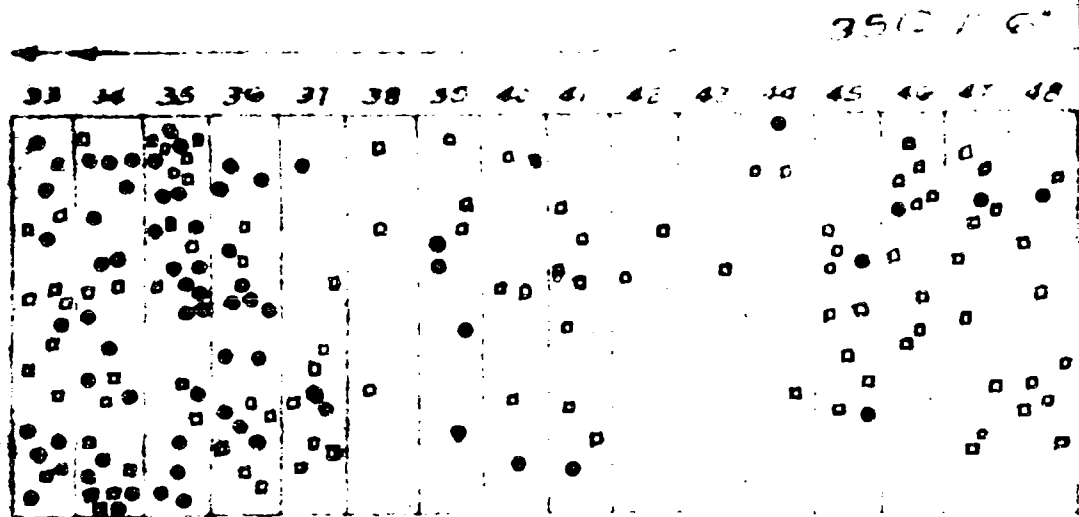
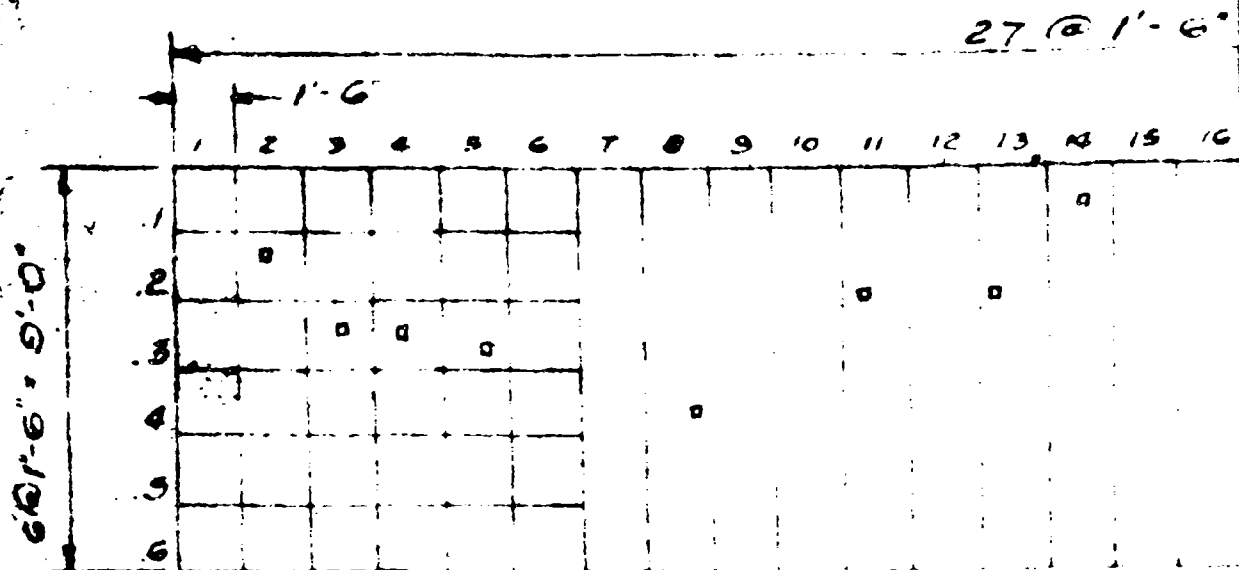
ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
Total					
55		1			4
56			4	2	2
			2	1	1
			3	1	2
Total					3
58.3			8	5	2
Total					1
59.1	12	8	1	1	1
			1	1	1
Total		1			2
59.2			3	1	1
			3	1	1
Total					2
60.1			5	5	2
Total					1
60.2	17	9	3	2	2
	6	5			
	13	12			
Total		3			1
60.3			1	1	1
			2	2	2
Total					2
61.1	15	10	3	1	1
	6	4	3	2	2
Total		2			2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
61.2	10	5	3	2	2
	11	6	3	2	2
			4	2	3
Total		2			3
61.3	7	7	4	2	4
			2	1	1
Total		1			2
62.1	5	4	2	1	1
	18	18	2	1	1
Total		2			2
62.2			1	1	1
Total					1
62.3			10	3	6
Total					1
63.1	20	16	8	3	7
Total		1			1
63.2	7	6			
	10	6			
	7	3			
Total		3			
63.3	20	18	3	2	3
			2	1	1
Total		1			2
TOTALS					
60' Radius		55			149

B-11822  
CONFIDENTIAL PANEL

30 FT RADIUS



1" NO. 3 PINE BOARDS (DRESSED) PL

DATE: 5-21-53, RD. NO. 16.

SHELL: 122 MM. SOVIET.

SUSPENSION: HORIZONTAL.

PERFORA  
PENETRA

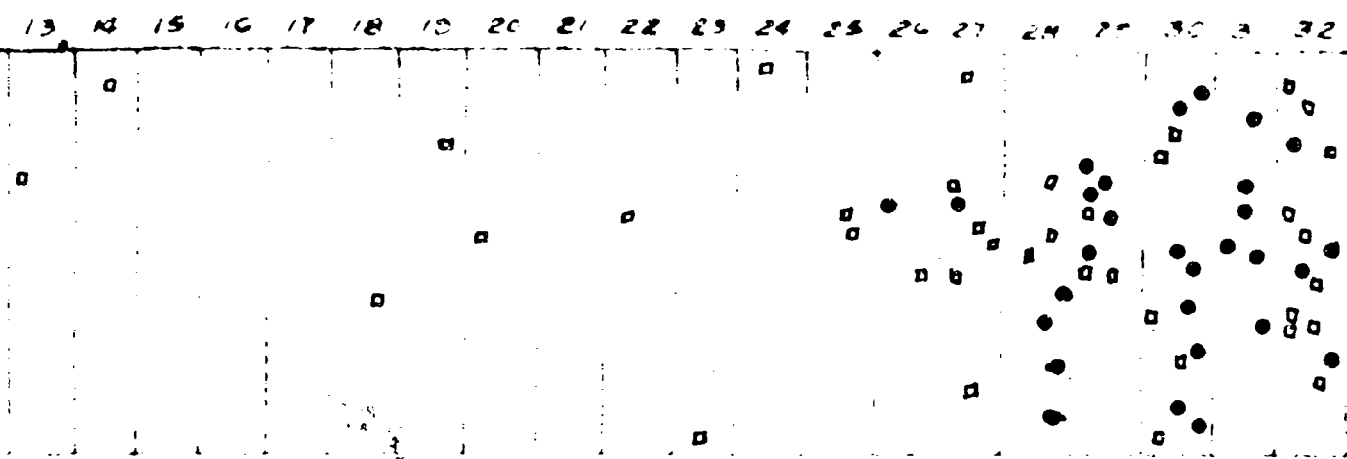
CONFIDENTIAL

1

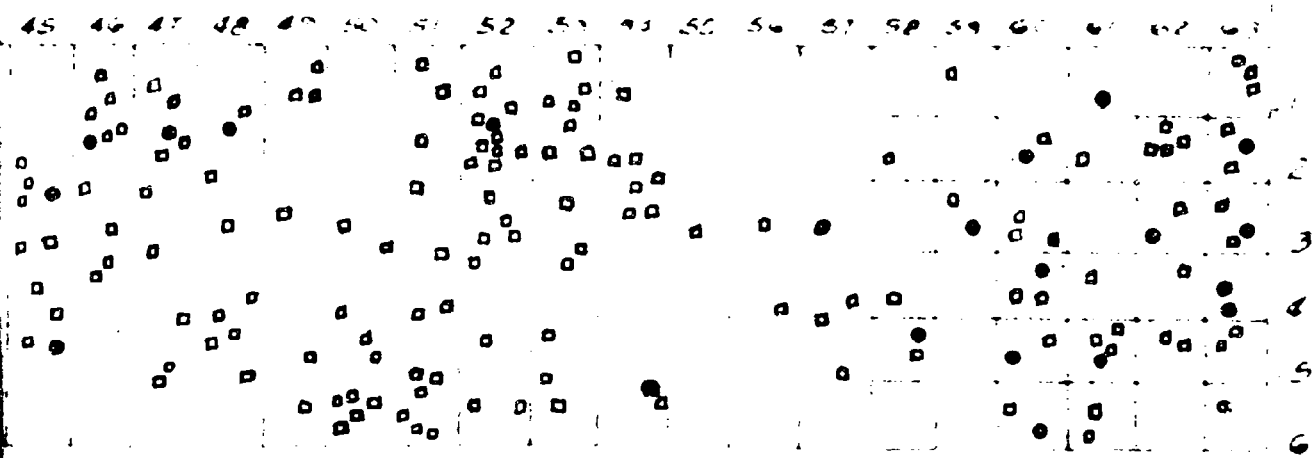
# PANEL A

RADIUS 180° ARC

27 @ 1'-6"



35 @ 1'-6"



SED) PLACED VERTICALLY

PERFORATIONS, 114. -●

PENETRATIONS, 260. -□

RANGE COVERING IN SECTION

LAYOUT OF PANELS

AND

NUMBER AND DISTRIBUTION

OF FRAGMENTS

PERFORATIONS

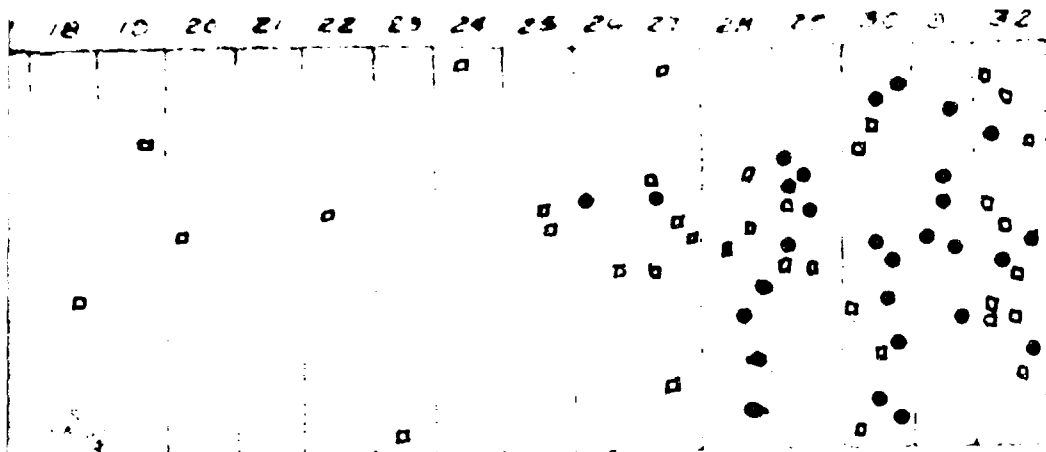
PERFORATIONS

CONFIDENTIAL

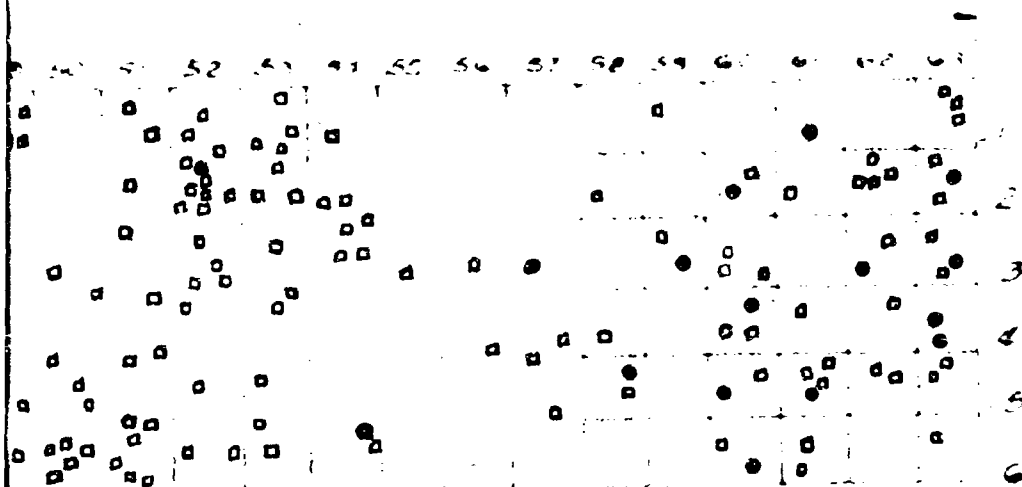


180° ARC

15"



3



CHD VERTICALLY

TIONS, 114. -●

TIONS, 260. -□

RANGE OF THE 1/2 IN. SECTION

AN OUT OF THE 1/2 IN. SECTION

NUMBER AND DISTRIBUTION  
OF FRAGMENTS  
(PER 1/2 IN. SECTION)

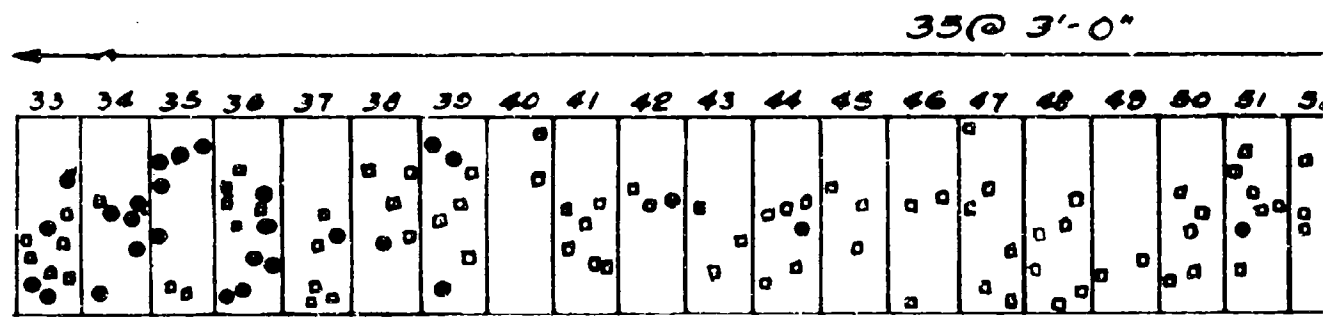
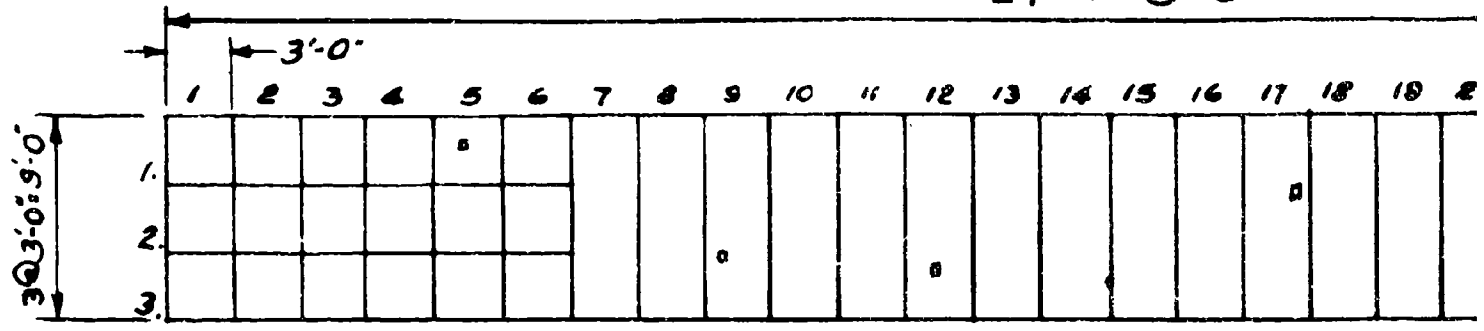
APPROXIMATELY 1/2 IN. SECTION  
OF 27 1/2 IN. SECTION

(27)

B-11822

1

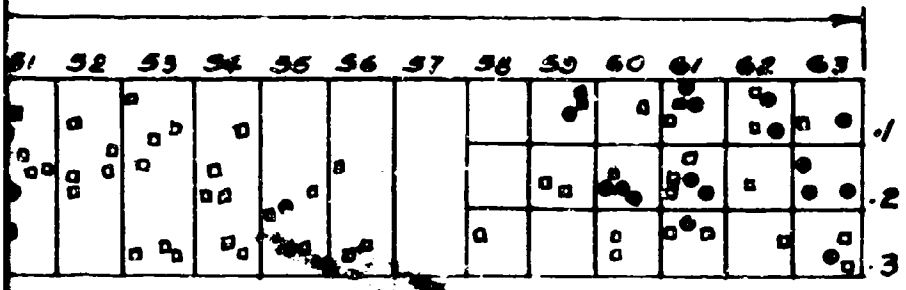
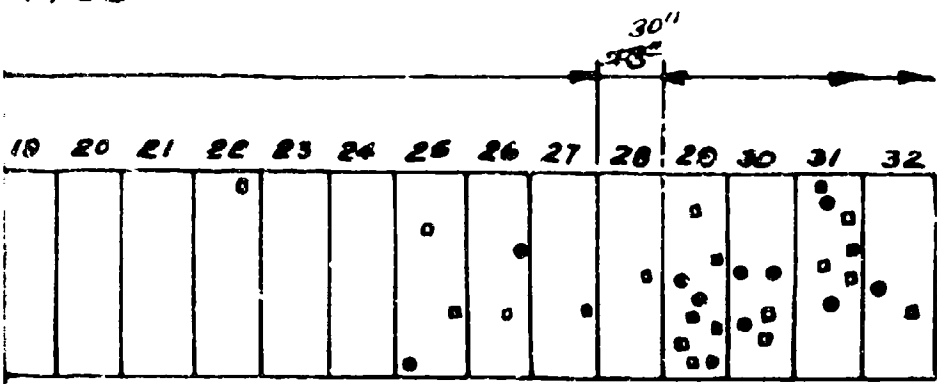
**CONFIDENTIAL** *PANEL B*  
60 FT. RADIUS 180° AR  
27 @ 3'-0"



1" NO. 3 PINE BOARDS (DRESSED) PLACED VE  
DATE: 5-21-53, RD. NO. 16. PERFORATIONS, 55  
SHELL: 122 MM. SOVIET. PENETRATIONS, 14  
SUSPENSION: HORIZONTAL.

**CONFIDENTIAL**

ARC



VERTICALLY.

55. -•

149. -□

RANGE OPERATIONS SECTION	
<p>LAYOUT OF PANELS FOR NUMBER AND DISTRIBUTION OF FRAGMENTS (60 FT. RADIUS)</p>	
<p>ABERDEEN PROVING GROUND, MD. OCT. 27, 1944</p>	
<p>APG 11876-14 PR</p>	

62B

PERMANENT RECORD NO. 9-11712  
ENCLOSURE 3

ROUND NO. 11

12 June 1952

SHELL, FU, 120mm, Soviet  
FILLING, C-42A, Ammonium Nitrate 90% - TNT 10%

SHELL MARKINGS

ORANGE

515  
4-45  
122

REMARKS

(none)

NOTE

Machine 1 found.

Shell has one split rotating band.

Weight of Shell w/o Gun Mounts - 41.01 lbs.  
As Fired - 48.00 lbs.

Distance from Shell to the center of the C-42A's destruction flame target - 22.00 ft.

Shell burst during its flight in A-10 Photograph No. A71257.

Remarks from the above report were made and verified in A-10 Photograph No. A71257.

RECEIVED  
JUN 13 1952  
U.S. ARMY  
CORPUS OF ENGINEERS  
Ft. Belvoir, Mont.

[REDACTED]

# FRAGMENT VELOCITY DATA

**CONFIDENTIAL**

Test of Shell, H.E., 122MM, Soviet AT/90 Side Velocity Box Data

Proof Director Mr. O. L. Rogers Date Fired 12 June 1952

Distance from detonation point to target 22' 7" feet. Round No. 11

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
1	96		17	N.R.		33	N.R.	
2	26		18	N.R.		34	N.R.	
3	N.R.		19	N.R.		35	2	
4	N.R.		20	1		36	26	
5	N.R.		21	8		37	21	
6	264		22	144		38	N.R.	
7	21		23	N.R.		39	N.R.	
8	13		24	12	2043	40	20	
9	2		25	25	2157	41	10	
10	2		26	34		42	62	
11	113(2)		27	1		43	N.R.	
12	N.R.		28	N.R.		44	4	
13	3		29	3		45	3	
14	176	2258	30	61		46	13	
15	11		31	N.R.		47	59	
16	20(2)		32	12		48	78	

Average velocity 2322 ft/sec.

NV - no velocity recorded.

NR - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than + 3.4 % for the highest velocity and + 3.1 % for the lowest velocity.

Sheet 1 of 5

**CONFIDENTIAL**

# FRAGMENT VELOCITY DATA

~~CONFIDENTIAL~~

Test of Shell, H.E. 122MM, Soviet Side Velocity Box Data  
 Proof Director Mr. O. L. Rogers Date Fired 12 June 1952  
 Distance from detonation point to target 22' 7" feet. Round No. 11

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
	7		65	15		81	8	
	N.R.		66	N.R.		82	69	2368
	115		67	15		83	79	
	3		68	213(2)		84	273	
	N.R.		69	N.R.		85	10	2157
	N.R.		70	9	2368	86	305	2231
	3		71	N.R.		87	21	2231
	N.R.		72	N.R.		88	N.R.	
	2		73	N.R.		89	N.R.	
	21		74	41		90	7	
	N.R.		75	26		91	3	
	72	2397	76	N.R.		92	0+	
	1		77	N.R.		93	51	
	128		78	N.R.		94	5(2)	2043
	N.R.	2311	79	N.R.		95	10	2027
	53		80	3		96	2	

Average velocity 3332 ft/sec.  
 NV - no velocity recorded.  
 NR - not recovered.

(2) - total weight of two pieces.  
 (n) - total weight of n pieces.

Individual velocity inaccuracies are less than  $\pm$  3.4 % for the highest velocity and  $\pm$  3.2 % for the lowest velocity.

Sheet 2 of 5

~~CONFIDENTIAL~~

# FRAGMENT VELOCITY DATA

Test of Shell, H.E. 122mm, Soviet

Side Velocity Box Data

Proof Director Mr. O. L. Rogers

Date Fired 12 June 1952

Distance from detonation point to target 22' 7" feet. Round No. 11

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
97	5		113	34		129	4	
98	2	2182	114	39		130	15	
99	4	2368	115	N.R.		131	N.R.	
100	9		116	9		132	N.R.	
101	12(3)		117	39		133	12	
102	N.R.	2311	118	N.R.		134	34	2489
103	N.R.		119	96		135	N.R.	
104	16	2157	120	37		136	16	
105	N.R.	2427	121	5		137	N.R.	
106	N.R.		122	N.R.		138	N.R.	
107	16		123	N.R.		139	N.R.	
108	106	2437	124	1		140	22	2555
109	18	2182	125	3	2489	141	N.R.	
110	25		126	N.R.		142	80(2)	2555
111	7	2555	127	N.R.		143	N.R.	2521
112	18		128	N.R.		144	N.R.	

Average velocity 2393 ft/sec.

NV - no velocity recorded.

NR - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than  $\pm$  3.4 % for the highest velocity and  $\pm$  3.1 % for the lowest velocity.

Sheet 3 of 5

CONFIDENTIAL

# FRAGMENT VELOCITY DATA

CONFIDENTIAL

Test of Shell, H.E. 122mm, Soviet Side Velocity Box Data

Proof Director Mr. O. L. Rogers Date Fired 12 June 1952

Distance from detonation point to target 22' 7" feet. Round No. 11

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
145	38	2458	161	N.R.		177	155	2427
146	7	2555	162	46		178	N.R.	2427
147	N.R.	2489	163	21		179	46	
148	26		164	10		180	04	
149	61	2555	165	3		181	2	2521
150	N.R.		166	6(2)		181	79(2)	2555
151	N.R.		167	11		183	47	2588
152	64		168	N.R.		184	N.R.	2427
153	16		169	30		185	N.R.	
154	N.R.		170	N.R.		186	1	
155	2	2311	171	N.R.		187	39	2521
156	N.R.		172	N.R.		188	N.R.	
157	12	2427	173	13		189	N.R.	
158	N.R.		174	8	2489	190	N.R.	
159	N.R.		175	3(2)		191	19	
160	N.R.		176	7	2458	192	35	

Average velocity 2392 ft/sec.

NV - no velocity recorded.

NR - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than + 3.4 % for the highest velocity and + 3.1 % for the lowest velocity.

Sheet 4 of 5

CONFIDENTIAL



Sheet 5 of 5

ORDG-737 19 FEB 48  
FORMERLY SPOTZ-F-281

PENETRATIO.

SHELLS IN PANELS

LOT NO.

09 June 52

TRAINING RECORD NUMBER

PRIOR TV NUMBER

PENETRATIONS OF SHELL 122mm, O-462A

LOADED AT/90

XXXXXXXXXX Sheet 1 of 37

Soviet

XXXXXXXXXX Round No. 11

IN PANELS WITH RADIUS OF 30'

AND

FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
2.5			1	1	1
Total					1
3.3			2	1	1
Total					1
5.1			2	1	1
Total					1
8			1	1	1
Total					1
9			1	1	1
			2	2	2
			1	1	1
			2	1	2
			1	1	1
Total					5
11			1	1	1
			2	1	1
			1	1	1
			1	1	1
Total					4
12			2	2	2
			2	2	3
			2	2	1
Total					3
13	4	2	2	2	6
Total		1			1
14			2	2	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
Total					1
15			3	1	1
			1	1	1
Total					2
16			1	1	1
			2	2	2
Total					2
17			3	2	6
			2	1	3
			7	3	8
Total					3
18			2	1	4
Total					1
20			1	1	1
Total					1
21			2	1	1
			1	1	1
Total					2
22	4	3	1	1	1
			2	1	3
			1	1	1
			1	1	1
Total		1			4
23	16	7	3	2	4
			2	1	2 /
			2	1	3

CONFIDENTIAL

# PENETRATION OF SHELLS IN PANELS

DATE 12 June 52

STATION NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

XXXXXXXXXX Sheet 2 of 37

XXXXXXXXXX Round No. 11

IN PANELS WITH RADIUS OF 30' AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			2	1	6
			1	1	1
Total		1			6
24	3	3	1	1	2
			2	1	2
			1	1	1
			3	2	7
			3	3	6
Total		1			5
25	4	2	3	3	4
	4	3	2	1	4
	6	3	2	1	4
	3	2	1	1	4
	4	3	2	2	10
	4	4	1	1	1
	5	3	1	1	3
			1	1	3
			3	2	3
			3	2	4
			2	2	4
			1	1	2
			1	1	2
			2	1	1
			3	3	3
			2	1	5
Total		7			16
26	5	3	2	2	4
	3	2	3	2	9
	2	1	1	1	2
	5	2	1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	4	3	3	2	8
	3	3	2	2	3
	5	2	2	1	2
	5	4	1	1	3
			1	1	2
			2	1	2
			2	1	2
			1	1	1
			1	1	2
			2	2	6
			2	2	4
			2	1	6
			1	1	1
Total		8			17
27	5	4	2	2	4
	4	3	1	1	1
	4	3	1	1	2
	5	5	1	1	2
	6	3	1	1	1
	4	3	1	1	1
	13	5	1	1	3
	3	3	3	3	6
	19	5	1	1	1
	3	2	3	3	6
	4	3	1	1	2
	4	3	2	1	1
			2	2	5
			1	1	3
			1	1	2
			1	1	2
			2	2	6
			3	2	2
			3	2	5

CONFIDENTIAL

# 100-100000-1 PENETRATIONS OF SHELLS IN PANELS

DATE 12 June 52  
FIRING NUMBER  
PRIORITY NUMBER  
XXXXXXXXX Sheet 3 of 37  
XXXXXXXXX Round No. 11  
ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			1	1	1
			2	2	6
			2	2	3
Total		12			23
23	7	4	3	2	5
	3	2	2	1	1
	11	7	3	1	3
	7	3	2	2	6
	9	4	3	3	5
	6	4	1	1	4
	6	4	1	1	1
	7	5	3	2	3
	7	4	1	1	3
	3	2	2	2	3
	6	4	3	2	6
			2	2	5
			1	1	6
			1	1	3
			1	1	1
			1	1	1
			2	2	4
			1	1	1
			1	1	2
			2	2	8
			1	1	1
Total		11			21
29	4	3	3	2	5
	7	4	1	1	5
	4	3	1	1	1
	6	3	1	1	1
	5	3	2	1	5

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	5	3	2	1	2
	6	3	2	1	2
	30	5	3	2	5
	3	2	2	1	7
	3	3	2	2	10
	8	5	1	1	3
	3	2	3	2	9
	2	2	1	1	1
	7	4	3	2	8
	3	2	2	2	2
			1	1	1
			2	1	3
			1	1	3
			2	2	10
			1	1	2
			1	1	5
			1	1	2
			2	2	8
			1	1	1
			1	1	1
Total		15			25
30	16	6	3	2	6
	6	4	1	1	1
	5	3	2	2	4
	14	6	4	2	4
	10	9	1	1	1
	13	7	2	1	2
	9	5	1	1	1
	12	4	4	2	7
	11	4	2	2	6
	6	2	1	1	1
	4	3	1	1	4
	6	4	3	2	6

CONFIDENTIAL

ORD 80-737 18 FEB 48  
FORMERLY SPOTZ-F-281

# PENETRATION OF SHELLS IN PANELS

NET NAME

STATION NUMBER

DATE 12 June 52

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet

IN PANELS WITH RADIUS OF 30' AND FEET

XXXXXXXXX Sheet 4 of 37

XXXXXXXXX Round No. 11

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	3	2	2	2	3
	10	9	1	1	1
	4	3	3	2	7
	10	3	1	1	2
	9	4	3	3	2
	4	3	1	1	1
	8	8	3	2	6
	7	4	1	1	1
			3	2	6
			1	1	1
			2	1	2
			1	1	1
			4	3	7
			1	1	1
			1	1	1
			3	2	5
			2	1	3
			2	1	2
			2	2	1
			1	1	3
			1	1	2
			2	1	8
			2	1	2
Total		20			35
31	4	3	3	2	1
	4	3	2	2	2
	3	2	2	1	2
	11	4	1	1	1
	3	2	3	2	8
	6	3	1	1	2
	5	5	2	2	5
	7	5	3	2	8
	4	3	1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	5	4	2	1	3
	8	4	1	1	1
			2	2	3
			1	1	2
			1	1	1
			2	1	3
			2	2	7
			2	2	4
			3	1	2
			2	2	6
			1	1	1
			2	1	2
			1	1	1
			2	2	9
			3	1	2
			2	1	1
			2	2	4
			4	2	4
			1	1	1
			3	3	5
			2	1	4
Total		11			30
32	6	4	1	1	1
	5	3	1	1	1
	13	6	2	2	2
	5	4	2	2	5
	8	8	4	3	10
	3	2	1	1	1
	7	5	3	2	4
	5	3	1	1	1
	3	2	2	2	5
	11	5	1	1	2
	4	2	2	1	6

# PENETRATION OF SHELLS IN PANELS

EST NOVS

PARING

NUMBER

PRIORITY NUMBER

XXXXXXXX

XXXXXXXX

ROCKET NUMBER

DATE 12 June 52

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

IN PANELS WITH RAC 301 AND FEET

Sheet 5 of 37

Round No. 11

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
cont 32			3	2	4
			3	2	3
			4	2	7
			2	1	3
			1	1	1
			1	1	2
			3	1	8
			3	2	4
			1	1	2
			1	1	1
			1	1	1
Total		11			22
33	11	5	2	1	1
	11	6	1	1	1
	5	4	2	1	3
	5	2	2	1	2
	23	8	2	1	1
	3	2	2	1	1
	6	4	4	2	5
	4	4	2	1	1
	17	6	3	2	3
	6	2	2	1	2
	4	2	2	2	3
	16	8	2	1	2
	4	3	1	1	1
	6	2	1	1	1
	10	5	3	2	7
	5	5	5	2	3
	7	3	1	1	2
	5	2	3	2	4
			3	1	3
			1	1	1
			1	1	3

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			3	2	3
			2	1	1
			2	1	6
			1	1	1
			1	1	1
			2	1	3
			2	1	2
			2	1	2
			3	2	10
			4	2	5
			3	3	9
			2	1	3
			2	1	1
			3	2	3
			3	2	4
			3	1	1
			4	2	1
Total		18			38
34	4	2	2	1	1
	10	8	1	1	1
	9	5	2	1	2
	5	2	2	2	2
	10	5	3	2	4
	4	2	2	1	1
	11	5	1	1	1
	9	7	2	1	1
	4	4	3	2	5
	14	7	1	1	1
	5	3	4	2	9
	6	5	1	1	2
	10	6	1	1	1
	14	6	1	1	1
		5	3	2	4

CONFIDENTIAL

1: 22 2.00

DATE 12 June 52

41315 (1) 4J43E8

09102171 1 4342

XXXXXXXX Sheet 6 of 37

XXXXXXXX Round No. 11

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm. 0-462A LOADED AT/90

Soviet

IN PANELS WITH RAIL OF

301

END

AT/90

FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	1	1
			1	1	1
			2	1	1
			1	1	1
Total		35			53
35	10	9	1	1	1
	8	3	1	1	1
	20	8	2	1	6
	5	3	1	1	1
	14	8	1	1	1
	12	5	1	1	2
	7	4	2	1	1
	22	7	3	2	4
	10	4	2	2	2
	13	7	2	2	1
	12	11	1	1	1
2	9	6	1	1	1
	15	7	1	1	1
	9	3	1	1	4
	4	3	1	1	1
	6	3	2	1	1
	15	6	2	1	2
	16	7	1	1	1
	5	3	1	1	1
	24	10	2	1	1
	4	3	1	1	2
	14	12	6	4	7
	3	2	3	2	2
	9	6	6	4	10
	3	2	1	1	2
	13	8	2	1	2
	15	4	2	1	1
	12	6	3	2	1

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ORDD-137 16 FEB 48  
FORMERLY SPOTZ-F-291

PENETRATION

SHELLS IN PANELS

POST-NOV

FIRING RECORD NUMBER

PRIORITY NUMBER

DATE 12 June 52

PENETRATIONS OF SHELL 122mm, O-452A LOADED AT/90

Soviet IN PANELS WITH RADIUS OF 30' AND FEET

XXXXXXXXXX Sheet 7 of 37

XXXXXXXXXX Round No. 11

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
35 cont	7	3	3	2	7				2	1	1
	8	4	1	1	1				3	2	3
	7	5	1	1	1				12	6	9
	10	5	1	1	1				1	1	1
	11	5	1	1	2				4	3	5
	15	9	4	2	3				3	2	3
	4	2	5	2	2				1	1	1
	4	4	1	1	1				3	2	4
	10	6	3	2	1				1	1	1
	9	8	2	1	1				1	1	1
	21	11	1	1	1				2	1	1
			4	3	3				6	4	7
			7	3	5				3	2	3
			3	2	4				2	1	3
			4	3	3				2	1	1
			2	1	2				4	1	3
			2	1	2				1	1	3
			1	1	1	Total		39			79
			3	2	4						
			5	3	8	35	6	2	3	3	7
			2	1	2		7	4	1	1	3
			2	1	3		6	4	4	2	3
			2	1	1		6	4	3	2	5
			1	1	2		14	6	5	3	5
			1	1	1		10	4	3	2	6
			3	2	3		10	6	1	1	1
			1	1	1		5	3	2	1	1
			1	1	1		16	6	1	1	1
			3	3	7		8	6	3	2	5
			3	2	4		7	4	3	2	4
			1	1	1		5	4	1	1	1
			2	1	3		5	3	3	2	7
			1	1	1		13	6	2	1	2
			4	3	5		8	5	2	2	3



# PENETRATION OF SHELLS IN PANELS

DATE 12 June 52

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

IN PANELS WITH RADIUS OF 30" AND FEET

LOT NO. 0

FIRING NO. 0

PRIORITY NUMBER

Sheet 8 of 37

Round No. 11

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
11	5		3	3	7
5	5		3	3	4
10	9		4	3	8
20	6		1	1	1
15	9		1	1	1
10	4		1	1	2
8	4		3	3	8
7	6		2	1	1
4	3		1	1	1
9	5		1	1	1
5	3		3	1	5
19	10		2	2	2
4	3		1	1	1
21	10		1	1	1
9	8		3	2	3
5	3		3	3	8
4	3		6	3	5
7	3		3	2	2
7	4		1	1	1
6	3		3	2	3
6	3		2	1	1
6	3		1	1	1
10	4		1	1	1
			2	1	2
			1	1	1
			2	1	1
			2	1	1
			2	1	1
			3	2	1
			4	3	3
			2	2	3
			2	2	3
			1	1	1
			2	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	2	2
			3	3	5
			2	1	1
			2	1	1
			3	2	6
			3	2	1
			1	1	3
			1	1	1
			3	2	3
			3	3	7
			2	1	1
			1	1	1
			2	2	2
			1	1	1
			3	2	4
			1	1	1
			1	1	1
			1	1	1
			3	3	7
			2	1	8
Total		38			70
37	7	3	2	1	1
	5	5	2	2	4
	9	5	4	2	3
	7	6	2	2	2
	8	5	3	3	3
	4	3	4	2	2
	5	4	2	1	2
	4	3	4	3	2
	8	6	2	2	2
	11	4	2	2	2
	17	5	1	1	1

CONFIDENTIAL

# PENETRATION OF SHELLS IN PANELS

TEST NUMBER

DATE 12 June 52

FIRING NUMBER

PRIORITY NUMBER

XXXXXXX Sheet 9 of 37

XXXXXXX Round No. 11

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet

IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	10	5	1	1	1
	9	4	1	1	1
			1	1	1
			4	3	5
			2	2	2
			1	1	1
			3	2	3
			1	1	1
			3	2	2
			4	3	1
			5	3	6
			4	3	4
			1	1	1
			3	3	2
			4	2	3
			4	1	1
			4	2	2
			2	1	1
			1	1	1
			3	3	4
			4	3	4
			3	2	1
			2	1	1
			2	1	2
			1	1	1
			1	1	1
			2	1	2
			2	1	1
			4	3	6
			5	2	3
			2	1	1
			1	1	1
			1	1	1
			2	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	1	1
			2	1	1
			2	2	2
Total		13			48
38	5	3	3	2	2
	4	4	2	2	1
	13	6	3	2	3
	6	3	2	1	1
	7	5	1	1	1
	8	5	3	2	3
	5	4	1	1	1
	7	4	3	2	3
	4	3	1	1	1
	8	4	1	1	1
			2	1	2
			1	1	1
			4	3	2
			1	1	1
			2	1	1
			1	1	1
			3	3	3
			1	1	2
			2	1	1
			3	2	3
			2	1	2
			1	1	1
			2	2	3
			2	1	1
			1	1	1
			2	1	3
			3	2	7
			1	1	1
			1	1	1

CONFIDENTIAL



PENETRATIONS OF SHELLS IN PANELS

CONFIDENTIAL

TEST NUMBER

DATE 12 June 52

FIRING NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet

XXXXXXXXX Sheet 11 of 37

XXXXXXXXX Round No. 11

IN PANELS WITH RADII OF 30' AND FEET

POCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			3	2	3
			1	1	1
			1	1	1
			1	1	1
			3	3	2
			1	1	1
			3	2	4
			1	1	1
			1	1	1
			3	3	4
			1	1	1
			3	2	2
			2	2	2
			1	1	1
			1	1	1
			4	3	4
			1	1	1
			1	1	1
			1	1	1
Total		6			28
42	15	8	5	3	3
	7	3	4	2	2
	15	8	1	1	1
			1	1	1
			2	1	1
			1	1	1
			1	1	1
			1	1	1
			4	3	2
			2	2	1
			9	4	6
			2	2	1
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			3	2	2
			1	1	1
			2	1	1
			3	3	2
			1	1	1
			3	3	3
			3	2	3
			2	2	1
			2	1	1
			3	2	4
			3	2	4
			1	1	1
			3	3	1
			3	2	1
			2	1	1
			4	3	5
			2	1	1
Total		3			31
43	11	8	4	3	4
			1	1	1
			6	4	8
			1	1	1
			2	2	1
			2	1	1
			1	1	1
			1	1	1
			3	2	1
			4	3	2
			1	1	1
			1	1	1
			1	1	1
			1	1	1

CONFIDENTIAL

ORDG-737 16 FEB 48  
FORMERLY SPOTZ-7-201

# PENETRATIONS OF SHELLS IN PANELS

TEST NUMBER

FIRING RANGE NUMBER

PRIORITY NUMBER

DATE 12 June 52

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet

Sheet 12 of 37

Round No. 11

IN PANELS WITH RADIUS OF 30' AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			3	2	3
			2	1	1
			3	2	2
			3	2	2
			1	1	1
			1	1	1
			1	1	1
			1	1	1
Total		1			23
44	5	5	5	2	5
	6	3	4	3	3
			2	2	2
			3	2	2
			1	1	1
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			3	3	2
			5	4	2
			2	2	2
Total		2			12
45	6	5	3	2	2
			4	3	3
			1	1	1
			1	1	1
			4	2	1
			1	1	1
			12	6	4
			2	1	1
			5	2	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	1	1
			3	3	2
			1	1	1
			2	1	1
			4	3	5
			3	2	2
			5	3	3
			1	1	1
			1	1	1
			1	1	1
			1	1	1
Total		1			19
46			2	1	1
			4	2	2
			1	1	1
			2	2	1
			2	1	1
			2	1	1
			2	1	1
			1	1	1
			1	1	1
			2	2	1
			6	3	3
			1	1	1
			3	1	1
			2	2	1
			1	1	1
			3	2	2
			1	1	1
Total					18
47			3	2	2
			2	1	1

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ORG-727 10 FEB 48 FORMERLY SPOTZ-F-201						DATE 12 June 52			
<b>PENETRATIONS OF SHELLS IN PANELS</b>									
PENETRATIONS OF SHELL <u>122mm, O-462A</u> LOADED <u>AT/90</u>						XXXXXX Sheet 13 of 37			
IN PANELS WITH RADIUS <u>Soviet</u> <u>30'</u> AND <u>FEET</u>						XXXXXX Round No. 11			
PERFORATIONS LENGTH WIDTH		PENETRATIONS LENGTH WIDTH DEPTH				PERFORATIONS LENGTH WIDTH		PENETRATIONS LENGTH WIDTH DEPTH	
			1	1	1				
			1	1	1				
			3	3	2				
			2	1	2				
			4	3	6				
			2	1	1				
			1	1	1				
			1	1	1				
			1	1	1				
			2	1	1				
			5	3	4				
			3	2	2				
			1	1	1				
			2	1	1				
			1	1	1				
			5	3	3				
			1	1	1				
			1	1	1				
			1	1	1				
			5	4	7				
			3	2	2				
			1	1	1				
			1	1	1				
			4	1	1				
			1	1	1				
			3	2	1				
			1	1	1				
			1	1	1				
			1	1	1				
Total					31				
48			3	2	1				
			1	1	1				
			3	3	3				
			4	2	2				
			1	1	1				
			3	2	1				
			2	1	1				
			4	3	5				
			2	1	1				
			1	1	1				
			2	2	1				
			5	3	5				
			3	2	3				
			1	1	1				
			3	2	2				
			2	2	1				
			1	1	1				
			2	2	2				
			2	1	1				
			3	1	1				
			1	1	1				
Total					21				
49			1	1	1				
			1	1	1				
			3	2	1				
			2	2	1				
			5	3	5				
			2	1	1				
			3	1	1				
			1	1	1				
			4	2	2				
			3	2	1				
			1	1	1				
			2	1	1				
			3	2	1				
			4	3	3				

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B-1122

ORD 90-737 10 FEB 40  
FORMERLY SPOTZ-P-191

PENETRATIONS OF SHELLS IN PANELS

LOT N 400  
FIRING RECORD NUMBER  
PRIORITY NUMBER  
Sheet 14 of 37  
Round No. 11  
ROCKET NUMBER

DATE 12 June 50

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90  
Soviet  
IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			2	1	1
			1	1	1
Total					17
50			5	2	2
			1	1	1
			1	1	1
			3	2	2
			1	1	1
			1	1	1
			1	1	1
			2	2	1
			4	1	2
			2	1	1
			2	1	1
			3	2	2
			1	1	1
			4	4	3
			2	1	1
			4	3	6
			1	1	1
			4	3	5
			2	2	2
			4	3	7
			1	1	1
			1	1	1
			1	1	1
			2	1	1
			1	1	1
			1	1	1
			2	1	1
			1	1	1
			1	1	1
			2	1	1
			4	1	2
Total					28

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
51			1	1	1
			1	1	1
			1	1	1
			2	1	1
			2	1	1
			1	1	1
			4	3	4
			1	1	1
			2	1	1
			2	1	1
			1	1	1
			1	1	1
			2	1	1
			1	1	1
			2	1	1
			1	1	1
			4	3	2
			1	1	1
			1	1	1
			5	3	4
			2	2	1
			3	2	3
			1	1	1
			2	2	2
			1	1	1
			2	2	1
			3	1	1
			2	1	1
			1	1	1
			3	2	2
			2	1	1
			3	2	5
			2	1	2
			3	2	7

CONFIDENTIAL

PENETRATIONS SHELLS IN PANELS

DT NUMBER

DATE 12 June 52

FIRING NUMBER

PRIORITY NUMBER

XXXXXXXXX Sheet 15 of 37

XXXXXXXXX Round No. 11

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

IN PANELS WITH RADIUS OF Soviet 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
Total					35
52			4	4	10
			1	1	1
			1	1	1
			1	1	1
			1	1	1
			5	4	9
			1	1	1
			1	1	1
			1	1	1
			3	2	2
			5	4	8
			3	3	3
			1	1	1
			1	1	1
			2	2	1
			1	1	1
			3	1	1
			1	1	1
			3	2	2
			1	1	1
Total					20
53			4	3	2
			3	2	2
			2	1	1
			1	1	1
			2	2	2
			3	3	3
			1	1	1
			4	3	8
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	2	2
			1	1	1
			1	1	1
			3	2	1
			2	1	1
			4	2	3
			2	1	1
			2	1	1
			3	2	1
			3	1	1
			4	2	3
			4	2	7
			3	2	3
			4	3	4
			2	1	1
			2	1	1
			3	1	1
			3	2	2
Total					27
54			3	3	5
			2	1	1
			1	1	1
			2	2	1
			2	1	1
			2	2	2
			2	2	1
			3	2	1
			3	1	1
			5	5	3
			2	1	1
			4	3	4
			2	2	2
			1	1	1

CONFIDENTIAL



## PENETRATIONS OF SHELLS IN PANELS

**SECRET**

DATE 12 June 52

PENETRATIONS OF SHELL 122mm. 0-462A LOADED AT/90

IN PANELS WITH RADIO OF Soviet

30 :

AND

AT/90

FIRING NO. NUMBER

PRIOR: 1 PLUMBER

Sheet 16 of 37

~~XXXXXXXXXX~~ Round No. 11

ROCKET POWER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	1	1
			2	1	2
			2	2	4
			2	1	1
			1	1	1
			2	1	1
			2	1	1
			3	2	5
			4	3	5
			1	1	1
			1	1	1
			3	3	4
			2	1	1
			1	1	1
Total					28
55	6	4	4	4	5
			2	2	1
			3	1	1
			1	1	1
			1	1	1
			3	2	1
			2	1	1
			2	1	1
			5	2	4
			1	1	1
			1	1	1
			1	1	1
			1	1	1
			3	1	2
			1	1	1
			1	1	1
			1	1	1
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			3	3	3
			3	1	1
			1	1	1
			1	1	1
			4	3	4
			2	1	1
			3	1	1
			2	2	1
			3	1	1
			2	2	1
			3	2	4
			1	1	1
			2	2	2
			2	1	1
			2	2	2
			1	1	1
			2	2	1
			1	1	1
			3	2	2
			3	3	2
Total		1			38
56	4	3	1	1	1
			1	1	1
			1	1	1
			2	1	1
			2	1	2
			5	2	1
			4	3	2
			3	2	4
			4	3	4
			1	1	1
			1	1	1
			1	1	1

~~CONFIDENTIAL~~

# PENETRATION OF SHELLS IN PANELS

CONFIDENTIAL

TEST NUMBER

DATE T2 June 5

FIRING NUMBER

PRIORITY NUMBER

Sheet 17 of 37

Round No. 11

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			3	2	6
			1	1	1
			1	1	1
			1	1	1
			1	1	1
			1	1	1
			4	3	2
			1	1	1
			4	3	3
Total		1			22
57	5	4	1	1	1
			3	2	2
			2	2	2
			4	2	1
			1	1	1
			1	1	1
			2	1	1
			2	2	2
			2	1	1
			2	1	1
			1	1	1
			1	1	1
			2	1	2
			1	1	1
			2	2	1
			3	2	2
			2	2	2
			3	2	1
			1	1	1
			1	1	1
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			3	3	6
			4	2	4
			2	2	2
			2	1	1
			1	1	1
			1	1	1
			2	1	1
Total		1			29
58.1	8	3	2	2	1
			2	1	1
			1	1	1
			1	1	1
			4	3	2
			1	1	1
			4	3	4
			1	1	1
			2	1	1
			3	2	4
			1	1	1
			2	2	2
Total		1			12
58.2			4	3	2
			2	1	1
			2	2	2
			2	1	1
			1	1	1
			3	2	3
			3	1	2
			3	2	2
			2	2	2
			2	2	1
Total					10

CONFIDENTIAL

OROS-787 10 FEB 48  
FORMERLY SPOTZ-F-201

PENETRATION

SHELLS IN PANELS

LOT NUMBER

FIRING RECORD NUMBER

DATE 12 June 52

PENETRATIONS OF SHELL 122mm, O-462A

LOADED AT/90

Soviet

IN PANELS WITH RADIUS OF

30'

AND

FEET

Sheet 18 of 37

Round No. 11

SHEET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
58.3			2	1	1
			3	3	1
			2	1	1
			4	4	2
			5	4	3
			2	1	1
			2	1	1
			3	2	2
			5	3	6
			4	3	3
			4	3	3
			5	4	5
			1	1	1
			3	2	2
Total					14
58.4	7	3	2	2	2
			1	1	1
			3	1	1
			4	4	4
			4	4	5
			3	3	3
			5	3	6
Total		1			7
58.5	9	6	4	3	4
			3	2	3
			4	2	2
			2	1	1
			6	2	5
			4	3	4
			2	1	1
			4	3	2
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	1	2
			1	1	1
			1	1	1
			3	3	4
Total		1			13
58.6			1	1	1
Total					1
59.1	4	3	1	1	1
			1	1	1
			2	1	1
			1	1	1
			2	1	5
			2	1	1
			4	2	1
			3	3	1
			4	2	2
			4	3	4
			2	1	1
			2	2	1
			2	1	1
			8	4	9
			7	3	3
			1	1	1
			2	2	2
Total		1			17
59.2			1	1	1
			4	3	4
			1	1	1
			4	3	1
			1	1	1
			3	3	5

CONFIDENTIAL

ORDRG-737 18 FEB 48  
FORMERLY SPOTZ-F-201

# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 12 June 52

FIRING RECORD NUMBER

PRIORITY NUMBER

XXXXXXXXXX Sheet 19 of 37

XXXXXXXXXX Round No. 11

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, C-462A LOADED AT/90

IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	1	1
Total					7
59.3	14	10	3	3	3
			3	2	3
			4	2	3
			4	2	2
			3	1	1
			6	5	7
			3	2	2
			3	2	2
			3	3	3
Total		1			9
59.4	3	2	4	1	1
	4	4	3	3	4
			2	1	1
			2	2	2
				1	2
				2	3
				1	1
			3	2	4
			4	4	5
			2	1	1
			2	2	1
			1	1	1
			1	1	1
			3	3	3
			3	1	1
			3	1	7
Total		2			16
59.5	9	3	1	1	1
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			3	2	5
			3	3	4
			4	3	3
			2	2	2
			3	2	2
			2	1	1
			1	1	1
			1	1	1
			1	1	1
			2	2	2
			2	1	1
Total		1			13
59.6			2	1	1
			2	2	2
			3	3	3
			3	3	2
			4	2	2
			7	3	5
			3	1	1
			1	1	1
			1	1	1
			1	1	1
Total					10
60.7	6	3	4	2	5
			5	2	2
			5	3	2
			6	3	3
			1	1	1
			1	1	1
			2	1	1
			1	1	1
			3	1	1

CONFIDENTIAL

# PENETRATIONS OF SHELLS IN PANELS

CONFIDENTIAL

LOT NUMBER

DATE 12 June 52

FIRING RECORD NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/30

Soviet

Sheet 20 of 37

Round No. 11

IN PANELS WITH RADIUS OF 30' AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			5	3	2
			1	1	1
Total		1			11
60.2			1	1	1
			1	1	1
			3	2	6
			1	1	1
			1	1	1
			5	3	2
			1	1	1
			8	3	4
Total					8
60.3	6	3	3	1	1
			4	3	2
			4	3	4
			1	1	1
			1	1	1
			3	2	1
			5	4	2
			4	2	1
			8	3	6
			2	2	2
			6	4	3
			1	1	1
			2	2	3
Total		1			13
60.4	10	4	2	2	1
	8	4	2	1	1
			1	1	1
			4	4	7
			3	2	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	1	3
			2	1	1
			2	1	1
			2	2	1
			7	4	5
			2	2	2
			3	2	1
			4	3	4
			3	3	4
			2	1	3
			1	1	1
Total		2			16
60.5	5	4	4	2	1
	8	6	4	3	2
	7	3	5	3	3
	5	4	4	4	9
			2	2	2
			2	1	1
			1	1	1
			1	1	1
Total		4			8
60.6	6	3	3	2	4
			3	2	2
			1	1	1
			2	1	1
			1	1	1
			4	3	3
			2	1	3
			1	1	1
Total		1			8
61.1	12	8	2	1	1

CONFIDENTIAL

# PENETRATIONS OF SHELLS IN PANELS

CONFIDENTIAL

SECRET

LOT NO.

DATE 12 June 50

FIRING RECORD NUMBER

PRIORITY NUMBER

XXXXXXXXXX Sheet 21 of 37

XXXXXXXXXX Round No. 11

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			4	3	2
			2	1	3
			4	2	3
			2	1	1
			3	2	4
			4	1	2
			2	1	1
			5	2	2
			5	3	3
			3	2	8
			3	2	3
			2	1	1
			2	1	1
			1	1	1
			1	1	1
Total					16
61.2			3	3	7
			6	5	5
			4	3	4
			1	1	1
			2	2	4
			3	2	6
			2	1	1
			3	3	4
			8	3	7
			2	2	2
			2	2	2
			1	1	1
			2	1	1
			4	3	7
			5	3	2
Total					15

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
61.3	14	3	4	3	3
			2	1	3
			9	3	3
			2	1	1
			5	4	7
			4	3	6
			2	1	1
			1	1	1
			1	1	1
			5	3	3
			1	1	1
			2	2	2
			2	2	3
			4	3	3
			5	3	5
			8	3	6
			2	2	2
			2	1	1
			7	3	5
			2	2	2
			1	1	1
Total		1			21
61.4	13	7	1	1	1
			2	1	1
			1	1	1
			2	1	1
			1	1	1
			2	2	2
			2	2	1
			4	3	4
			2	1	1
			3	3	7
			3	2	2

CONFIDENTIAL

ORCSG-737 18 PER 48  
FORMERLY SPOT-FIELD

# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 12 June 52

FIRING RECORD NUMBER

PRIORITY NUMBER

XXXXXXXXX Sheet 22 of 37

XXXXXXXXX Round No. 11

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet

IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	2	2				8	4	6
			1	1	1				1	1	1
			5	4	5				1	1	1
			2	1	1				2	1	1
			3	1	2				2	2	2
			2	2	3				3	1	1
			4	3	9				1	1	1
			1	1	1	Total		1			15
			1	1	1						
Total		1			20	62.1	12	5	1	1	1
61.6	5	4	2	1	1		6	4	4	3	7
			6	3	2				7	2	9
			3	2	1				1	1	1
			1	1	1				1	1	1
			3	1	1				1	1	1
			2	1	1				2	1	1
			1	1	1				3	2	5
			1	1	1				3	3	6
			6	3	7				5	3	5
			3	2	1	Total		2			11
			1	1	1						
			2	1	1	62.2	7	3	3	2	2
			1	1	1		4	3	5	2	4
Total		1			13		9	3	1	1	1
61.6	10	4	2	2	2				2	2	3
			4	3	1				3	3	3
			3	3	3				2	1	2
			5	4	4				7	3	5
			4	3	3				3	2	5
			4	2	4				5	2	3
			1	1	1				3	3	8
			1	1	1				4	2	4
									1	1	1

CONFIDENTIAL

PENETRATION OF SHELLS IN PANELS

1ST NAME

DATE 12 June 52

FIRING NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90  
Soviet

XXXXXX Sheet 23 of 37

XXXXXX Round No. 11

IN PANELS WITH RADIUS OF 30' AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	1	1				1	1	1
			1	1	1	Total		2			26
			3	2	2						
			4	3	3	62.4	6	5	2	2	1
			2	2	1				2	1	1
			2	1	1				2	1	2
			3	1	4				2	1	2
Total		3			19				4	3	3
									3	2	2
62.3	7	3	1	1	1				3	2	2
	4	4	2	2	2				5	3	4
			3	2	2				2	1	1
			3	3	3				3	1	2
			3	2	1				2	2	2
			4	2	4				3	2	3
			1	1	1				2	2	2
			4	3	6				2	2	2
			3	3	3				2	2	1
			1	1	2				3	2	6
			2	2	1				1	1	1
			2	2	4				2	1	1
			3	3	6	Total		1			18
			8	2	6						
			2	2	2	62.5			3	3	4
			3	2	2				1	1	1
			3	2	3				4	3	3
			3	2	4				8	2	3
			4	2	2				3	1	1
			2	1	1				3	3	3
			1	1	1				3	2	2
			2	1	1				2	2	1
			1	1	1				3	3	6
			4	3	5				2	2	1
			1	1	1				2	1	2



# PENETRATIONS OF SHELLS IN PANELS

TEST NO. 1  
FIRING RECORD NUMBER

DATE 12 June 52

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet  
IN PANELS WITH RADII OF 30' AND FEET

PRIORITY NUMBER

XXXXXXXXXX Sheet 24 of 37

XXXXXXXXXX Round No. 11

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	1	1
			7	2	3
			3	2	5
			4	3	4
			2	2	1
			4	4	6
			5	3	10
Total					18
62.6			1	1	1
			4	3	5
			2	2	1
			10	4	10
			3	2	3
			2	1	1
			2	1	1
			1	1	1
			5	2	2
			4	3	2
			1	1	1
			2	1	1
			2	2	2
			2	2	1
Total					14
63.1	6	3	2	2	1
	9	3	3	3	3
	7	2	1	1	1
			1	1	1
			1	1	1
			1	1	1
			4	2	3
			4	1	3
			4	3	4

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			4	3	4
			5	3	4
			1	1	1
			1	1	1
			2	2	4
			1	1	2
			3	2	2
Total		3			16
63.2			1	1	1
			1	1	1
			3	2	4
			1	1	2
			3	3	2
			3	2	3
			6	2	8
			1	1	1
			3	2	5
			2	2	1
Total					10
63.3	5	3	3	2	9
			5	3	3
			4	1	3
			3	3	3
			2	2	2
			2	2	7
			1	1	1
			1	1	1
			1	1	1
			2	2	1
			1	1	2
			1	1	1
			2	2	1

CONFIDENTIAL

PENETRATION OF SHELLS IN PANELS

LOT NO.

PAIRING NUMBER

DATE 12 June 52

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90  
Soviet

XXXXXXXXX Sheet 25 of 37

XXXXXXXXX Round No. 11

IN PANELS WITH RADIUS OF 30' AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
Total		1			13
63.4	5	4	1	1	1
	5	3	1	1	1
	5	3	1	1	1
	4	3	1	1	1
	9	2	1	1	1
	8	3	1	1	1
			1	1	1
			3	1	1
			2	2	2
			2	1	5
			3	3	8
			2	2	1
			3	2	1
			2	2	2
			3	2	3
			4	3	5
			2	1	1
Total		6			17
63.5	4	3	3	2	3
	8	3	1	1	1
	8	5	3	2	4
			3	3	7
			1	1	1
			1	1	1
			4	2	7
			1	1	1
			2	1	1
			5	2	4
			3	2	2
			1	1	1
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			7	3	7
			2	1	1
			2	2	4
			2	2	3
Total		3			17
63.6	5	4	2	1	1
			4	1	4
			8	4	3
			2	1	1
			1	1	1
			3	2	3
			7	5	5
			1	1	1
			2	1	1
			4	3	3
			1	1	1
			1	1	1
			2	1	1
			2	1	1
			9	3	3
			1	1	1
Total		1			16
TOTALS					
30' Radius		319			1518

CONFIDENTIAL

ORD 4-787 10 FEB 48  
FORMERLY SPOTZ-F-201

PENETRATIO.

SHELLS IN PANELS

ART NUMBER  
FIRING RE NUMBER

DATE 12 June 52

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet

IN PANELS WITH RADIUS OF 60' AND FEET

PRIORITY NUMBER

XXXXXXXXX Sheet 26 of 37

XXXXXXXXX Round No. 11

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
2.2			1	1	1
Total					1
2.3			3	2	3
Total					1
15			4	2	2
Total					1
18	4	2			
Total		1			
19			2	1	2
Total					1
20			1	1	1
Total					1
21			4	2	2
Total					1
22			3	2	2
Total					1
23	14	4	1	1	1
Total		1			1
24			2	1	1
			2	1	1
			2	2	1
			1	1	1
			5	4	5
Total					5

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
2.5	5	3	3	3	2
			2	1	1
			2	1	1
			3	2	3
			3	1	1
			2	1	1
			4	2	1
			1	1	1
			2	1	1
			3	2	2
			3	2	2
			2	1	2
			3	1	1
			2	1	1
Total		1			14
26	4	4	3	2	3
19	10		2	2	1
			4	3	4
			3	2	1
			2	1	1
			3	2	3
			1	1	1
			3	2	3
			2	1	2
			2	1	1
			3	2	2
			5	3	2
			3	2	1
			2	2	1
			5	4	2
Total		2			15

CONFIDENTIAL

# PENETRATIONS OF SHELLS IN PANELS

LOT N.W.

DATE 12 June 52

FIRING RANGE NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90  
Soviet

Sheet 27 of 37  
Round No. 11

IN PANELS WITH RADII OF 60' AND FEET

RACKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
27	6	4	4	2	2
	8	6	4	3	10
	4	3	4	3	2
			2	1	1
			2	2	1
			6	4	7
			4	1	2
			2	2	1
			5	3	2
			3	1	2
			3	1	1
			4	3	9
			12	4	8
Total		3			13
28	13	7	2	1	1
	9	5	1	1	1
	9	5	1	1	1
	6	6	1	1	1
	7	6	1	1	1
			2	1	1
			2	1	1
			2	1	1
			3	2	1
			2	1	1
			3	2	2
			6	3	4
			1	1	1
Total		5			13
29	7	5	2	2	1
	5	3	3	2	6
	24	8	2	2	1
	12	5	1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	7	3	3	2	1
	5	2	9	3	6
	4	3	2	2	1
	8	4	3	2	1
	7	4	4	3	4
			5	2	5
			2	1	1
			3	3	2
			4	2	2
			2	2	2
			2	1	1
			4	2	2
			3	1	1
			3	1	1
			3	2	1
			3	2	3
			1	1	1
Total		9			21

CONFIDENTIAL

PENETRATION SHELLS IN PANELS

CONFIDENTIAL

DATE 12 June 52

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

IN PANELS WITH RADIUS OF Soviet 60" AND FEET

LOT NUMBER  
FIRING NUMBER

PRIORITY NUMBER

Sheet 28 of 37

Round No. 11

PROJECT NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
30	10	4	2	2	2
	8	6	1	1	2
	10	6	1	1	2
	12	6	2	1	1
	4	6	1	1	1
			1	1	1
			1	1	1
			3	2	3
			2	2	3
			2	1	4
			4	4	6
			2	2	2
			2	2	1
			1	1	2
			3	2	10
			1	1	1
			2	1	2
Total		5			17
31	10	8	1	1	1
	7	4	4	6	8
	8	6	3	2	2
	7	6	3	2	3
	7	4	2	2	2
			3	2	2
			3	2	2
			1	1	1
			3	2	3
			3	2	2
			2	1	1
			3	5	4
			5	3	3
			1	1	1
Total		5			14

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
32	10	6	2	2	1
	8	6	6	4	2
	11	6	2	2	2
			6	4	6
			1	1	1
			3	1	2
			3		2
Total		3			7
33	10	6	1	1	1
	12	8	2	2	2
	10	5	5	3	4
	8	6	3	2	2
	26	8	1	1	1
	12	4	8	5	7
	7	5	1	1	1
	10	4	1	1	1
	8	6	5	3	5
	12	6	1	1	2
			3	3	2
			2	1	1
			4	2	4
			5	4	5
			4	3	5
			3	2	2
			3	3	2
			6	4	6
			5	2	4
			2	2	4
			3	2	4
			4	6	8
Total		10			22

CONFIDENTIAL

# PENETRATIONS OF SHELLS IN PANELS

37 NOV

DATE 12 June 52

FIRING RECORD NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

XXXXXXX Round No. 11

IN PANELS WITH RADIUS OF Soviet 60' AND FEET

XXXXXXX Sheet 29 of 37

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
34	14	6	2	2	2		8	4	4	3	4
	24	9	1	1	1		15	10	2	2	2
	18	8	2	2	3		6	4	1	1	1
	8	6	4	4	2		20	6	4	3	2
	16	7	5	4	3		16	8	4	1	1
	12	4	2	1	2		18	7	6	4	6
	8	5	2	2	4		5	4	3	2	2
	20	5	4	1	1		12	6	3	2	2
	5	4	2	1	1		12	4	4	2	2
	9	4	3	1	1		16	8	4	4	4
	10	6	1	1	1		14	6	2	2	2
	12	9	1	1	1		14	8	2	2	2
	8	7	1	1	1		6	4	1	1	1
			5	3	4				1	1	1
			8	4	7				4	3	2
			6	6	6				1	1	1
			5	3	2				4	2	4
			2	2	3				4	2	2
			2	1	1				1	1	1
			2	1	1				2	2	2
			2	1	1				3	2	2
			1	1	1				4	2	2
			2	1	1				6	4	7
			1	1	1				2	2	2
			2	2	2				6	4	2
			4	3	5				1	1	1
			2	1	1				5	2	3
Total		13			27				1	1	1
									3	3	4
35	8	6	5	2	2				2	2	2
	16	16	1	1	1				1	1	1
	8	6	1	1	1				2	2	2
	11	4	3	3	3				2	2	2
	14	6	2	2	2				4	2	3

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**CONFIDENTIAL**

B-11872

ORD 60-737 10 FEB 48  
FORMERLY SPOTE-F-101

**PENETRATIONS OF SHELLS IN PANELS**

LOT NUMBER \_\_\_\_\_ DATE 12 June 52

FIRING SEQUENCE NUMBER \_\_\_\_\_

PRIORITY NUMBER \_\_\_\_\_

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

~~XXXXXXXX~~ Sheet 30 of 37

IN PANELS WITH RADIUS OF 501 AND FEET

~~XXXXXXXX~~ Round No. 11

ROCKET NUMBER \_\_\_\_\_

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			4	4	4
			1	1	2
			1	1	1
			2	1	1
Total	18				44
36	10	4	4	3	3
	10	6	4	3	3
	8	5	5	3	2
	16	10	4	2	2
	8	4	3	1	2
			2	1	1
			1	1	1
			1	1	2
			1	1	1
			1	1	1
			1	1	1
			3	3	4
			1	1	1
			2	2	1
			2	2	2
			3	2	3
			4	3	2
			4	2	2
			1	1	1
			1	1	2
			1	1	1
Total	5				21
37	7	4	2	2	4
			1	1	1
			1	1	1
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
cont					
37			4	2	2
			2	1	1
			1	1	1
			1	1	1
			1	1	1
			2	1	1
			2	2	2
			2	1	1
Total	1				12
38	7	5	2	1	1
			6	5	10
			1	1	1
			6	4	4
			7	4	4
			4	2	4
			6	4	3
			5	4	3
			4	2	2
Total	1				9
39	5	5	1	1	1
	6	6	3	2	2
			3	2	2
			5	2	5
			2	2	1
			1	1	1
			2	1	2
			1	1	2
			2	2	2
			2	2	3
			3	3	3
Total	2				11

**CONFIDENTIAL**

ORDM-757 18 FEB 48  
FORMERLY SPOTZ-F-201

# PENETRATIONS OF SHELLS IN PANELS

LOG NO. 1

DATE 12 June 52

FIRING ROOM NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Sheet 31 of 37

Soviet

Round No. 11

IN PANELS WITH RADII OF 601 AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
40			2	2	2
			3	2	1
			7	4	6
			7	5	5
			3	2	3
Total					5
41	13	5	4	2	2
	14	9	6	5	7
	4	12	4	4	2
			2	1	1
			3	2	2
Total		3			5
42	8	3	4	2	2
			2	2	1
			2	2	2
			9	3	3
			1	1	1
			4	2	2
Total		1			6
43			1	1	1
			3	1	1
			2	2	2
			1	1	1
Total					4
44	6	4	2	2	2
			2	1	1
			1	1	1
			1	1	1
			2	1	1
Total		1			5

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
45			1	1	1
			2	2	1
			2	2	1
			1	1	1
			3	2	2
			4	2	2
Total					6
46			5	4	3
			1	1	1
			4	4	2
			2	2	1
			2	2	5
			3	3	1
Total					6
47			4	4	1
			2	2	1
			4	2	2
			2	2	2
			3	2	2
Total					5
48			4	2	3
			2	2	1
			4	2	3
Total					3
49			2	2	1
			2	2	1
			2	1	1
			4	2	2
			1	1	1
			1	1	1
Total					6

CONFIDENTIAL



ORD 86-737 10 FEB 48  
FORMERLY SPOTZ-F-201

# PENETRATIONS OF SHELLS IN PANELS

DATE 12 June 52

PENETRATIONS OF SHELL 122mm, 0-462A LOADED AT/90  
Soviet  
IN PANELS WITH RADIO OF 60" AND FEET

FIRING SEQUENCE NUMBER

PRIORITY NUMBER

~~XXXXXX~~ Sheet 32 of 37

~~XXXXXX~~ Round No. 11

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
50			2	2	2
			1	1	1
			4	2	3
			4	4	2
			3	2	2
			2	2	2
			1	1	1
			4	3	3
Total					8
51			1	1	1
			2	1	1
			2	2	2
			4	4	6
			1	1	1
			4	3	2
			2	2	2
Total					7
52			1	1	1
			1	1	1
			1	1	1
			4	2	2
			1	1	1
			4	3	3
			2	2	2
			4	3	2
			4	2	2
Total					9
53			3	3	5
			5	4	4
			4	4	4
			4	3	4

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
cont 53			3	2	2
Total					5
54			1	1	2
			2	1	1
			1	1	1
			1	1	1
			2	2	2
			2	2	1
			2	1	1
Total					7
55			4	3	2
			1	1	2
			4	2	2
			1	1	1
			2	2	2
			3	2	2
			4	3	1
Total					7
56			4	2	2
			2	1	1
			1	1	1
			1	1	1
			2	1	1
			3	3	2
			3	3	2
Total					7
57			3	2	2
			1	1	1
			4	3	2
			1	1	1

PENETRATIONS OF SHELLS IN PANELS

DATE 12 June 58

DATE 12 June 58

FIRING RECORD NUMBER

PRIORITY NUMBER

XXXXXXXXX Sheet 33 of 37  
XXXXXXXXX Round No. 11

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet

IN PANELS WITH RADII OF 60' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
57 cont			1	1	1
			3	2	2
			2	2	3
			2	2	2
			2	2	1
			2	2	2
Total					10
58.1			2	1	1
			3	2	2
			1	1	1
			1	1	1
			2	2	2
Total					5
58.2	9	7	2	2	2
	10	8	1	1	1
			4	2	2
			4	2	3
Total		2			4
58.3	6	4	5	4	3
			2	1	1
			3	1	1
			4	2	2
			2	1	2
			2	1	1
Total		1			
59.1	4	4	2	2	2
			1	1	1
			6	6	4
			4	2	3
			3	2	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
59.1 cont			4	2	2
			3	2	1
			6	2	5
			1	1	1
			4	2	2
			4	2	2
			1	1	1
Total		1			12
59.2			2	1	1
			2	1	1
			2	2	2
			2	2	1
			5	2	3
			2	2	1
			1	1	1
			1	1	1
			3	1	2
			3	2	2
			3	2	2
			4	2	2
			1	1	1
			5	5	6
			2	2	2
Total					15
59.3	4	8	1	1	1
			2	2	1
			2	2	4
			2	2	2
			2	2	2
			2	1	2
			4	2	2
			1	1	1

CONFIDENTIAL

# PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm O-462A LOADED AT/90  
Soviet  
IN PANELS WITH RADII OF 60' AND FEET

TEST NUMBER  
FIRING RECORD NUMBER  
PRIORITY NUMBER  
Sheet 34 of 37  
Round No. 11  
ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
cont 59.3			1	1	2
			4	2	2
Total		1			10
60.1			1	1	1
			1	1	1
			2	2	2
			3	3	3
			1	1	1
			4	4	4
			1	1	1
			4	3	4
			4	2	4
			2	2	2
			3	1	1
			1	1	1
			4	2	2
			1	1	1
			1	1	1
			7	3	5
			4	2	3
			4	1	1
			4	3	3
			2	2	2
			1	1	1
			2	2	2
			2	2	2
			1	1	1
			2	1	1
			2	1	1
			6	2	6
Total					27
60.2			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
cont 60.2			6	3	2
			2	1	2
			2	1	1
			1	1	4
			1	1	1
			5	2	4
			8	2	4
			1	1	1
			1	1	1
			2	2	1
			2	1	1
			2	1	1
			1	1	1
			1	1	1
			5	2	2
			4	2	3
			6	3	2
			3	2	1
Total					19
60.3			1	1	1
			4	2	2
			4	2	2
			3	2	1
			4	3	4
			2	2	1
			3	2	1
			1	1	1
			1	1	1
			4	3	2
			5	2	4
			4	4	2
			2	2	2
			2	2	2

PENETRATIONS OF SHELLS IN PANELS

BOX NUM

FIRING NO. NUMBER

PRIORITY NUMBER

DATE 12 June 52

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Sheet 35 of 37

Round No. 11

IN PANELS WITH RADIUS OF 60' AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
cont 60.3			12	2	6	cont 61.2			2	2	2
			1	1	1				2	2	1
			2	1	1				6	3	2
			6	3	3				2	2	8
			5	2	2				2	2	2
			1	1	1				1	1	1
			2	1	1				2	2	2
Total					21				10	5	7
									2	2	2
61.1			3	2	2				3	2	2
			1	1	1	Total					17
			2	1	1						
			1	1	1	61.3			5	2	3
			2	1	2				4	4	2
			4	2	2				4	2	1
			1	1	1				6	2	4
			7	3	3				2	2	2
			2	2	2				4	3	3
			4	3	5				6	2	2
			2	1	1				1	1	1
			2	2	2				1	1	1
			2	1	2				5	4	3
			2	2	2				10	3	8
			2	2	3				5	2	3
			3	2	2	Total					12
Total					16						
						62.1			2	1	1
61.2			4	4	2				2	2	2
			4	3	4				1	1	1
			1	1	1				6	3	3
			3	2	2				3	2	2
			1	1	1				4	2	2
			7	5	6				7	5	4
			1	1	1				1	1	1

ORD 66-737 19 FEB 46  
FORMERLY SPOTZ-F-281

# PENETRATIONS OF SHELLS IN PANELS

TEST NO.

DATE 12 June 59

FIRING RE. NUMBER

PRIORITY NUMBER

XXXXXXX Round No. 11

XXXXXXXXX Sheet 36 of 37

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, O-462A

LOADED AT/90

IN PANELS WITH RADIUS OF Soviet 50'

AND

FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
cont 62.1			2	2	3
			2	2	5
			7	3	4
			1	1	1
			4	2	3
			1	1	1
			1	1	1
			1	1	1
Total					16
62.2	6	4	4	2	2
	4	3	2	2	2
			4	2	2
			4	1	1
			1	1	1
			4	3	2
			1	1	1
			4	2	4
			2	1	2
			4	2	2
			2	2	2
			1	1	1
			4	2	2
Total		2			13
62.3			7	3	2
			1	1	1
			1	1	1
			4	4	4
			9	4	3
			6	4	3
			1	1	1
			4	3	2
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
cont 62.3			1	1	1
			3	3	1
			5	3	4
			6	2	2
			4	2	5
Total					14
63.1	7	3	6	3	3
			4	2	3
			6	3	5
			3	2	3
			1	1	1
			4	3	7
			4	3	7
			1	1	1
			1	1	1
			2	2	2
			4	2	3
			1	1	1
			1	1	1
			7	2	5
			4	1	4
			2	1	1
			4	3	3
			7	4	4
			7	2	4
			1	1	1
			2	1	1
			5	3	3
Total		1			21
63.2	7	2	1	1	1
	7	7	3	2	2
	8	2	1	1	1
			6	3	6

## PENETRATIONS OF SHELLS IN PANELS

LOT 404

DATE 12 June 52

FIRING RECORD NUMBER

POSITIVITY INDEXER

PENETRATIONS OF SHELL 122mm, O-462A      LOADED AT/90

~~XXXXXXXX~~ Sheet 37 of 37

~~XXXXXXXXXX~~ Round No. 11

Soviet			
IN PANELS WITH RATIO OF	60%	AND	FEET
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10
11	11	11	11
12	12	12	12
13	13	13	13
14	14	14	14
15	15	15	15
16	16	16	16
17	17	17	17
18	18	18	18
19	19	19	19
20	20	20	20
21	21	21	21
22	22	22	22
23	23	23	23
24	24	24	24
25	25	25	25
26	26	26	26
27	27	27	27
28	28	28	28
29	29	29	29
30	30	30	30
31	31	31	31
32	32	32	32
33	33	33	33
34	34	34	34
35	35	35	35
36	36	36	36
37	37	37	37
38	38	38	38
39	39	39	39
40	40	40	40
41	41	41	41
42	42	42	42
43	43	43	43
44	44	44	44
45	45	45	45
46	46	46	46
47	47	47	47
48	48	48	48
49	49	49	49
50	50	50	50
51	51	51	51
52	52	52	52
53	53	53	53
54	54	54	54
55	55	55	55
56	56	56	56
57	57	57	57
58	58	58	58
59	59	59	59
60	60	60	60
61	61	61	61
62	62	62	62
63	63	63	63
64	64	64	64
65	65	65	65
66	66	66	66
67	67	67	67
68	68	68	68
69	69	69	69
70	70	70	70
71	71	71	71
72	72	72	72
73	73	73	73
74	74	74	74
75	75	75	75
76	76	76	76
77	77	77	77
78	78	78	78
79	79	79	79
80	80	80	80
81	81	81	81
82	82	82	82
83	83	83	83
84	84	84	84
85	85	85	85
86	86	86	86
87	87	87	87
88	88	88	88
89	89	89	89
90	90	90	90
91	91	91	91
92	92	92	92
93	93	93	93
94	94	94	94
95	95	95	95
96	96	96	96
97	97	97	97
98	98	98	98
99	99	99	99
100	100	100	100

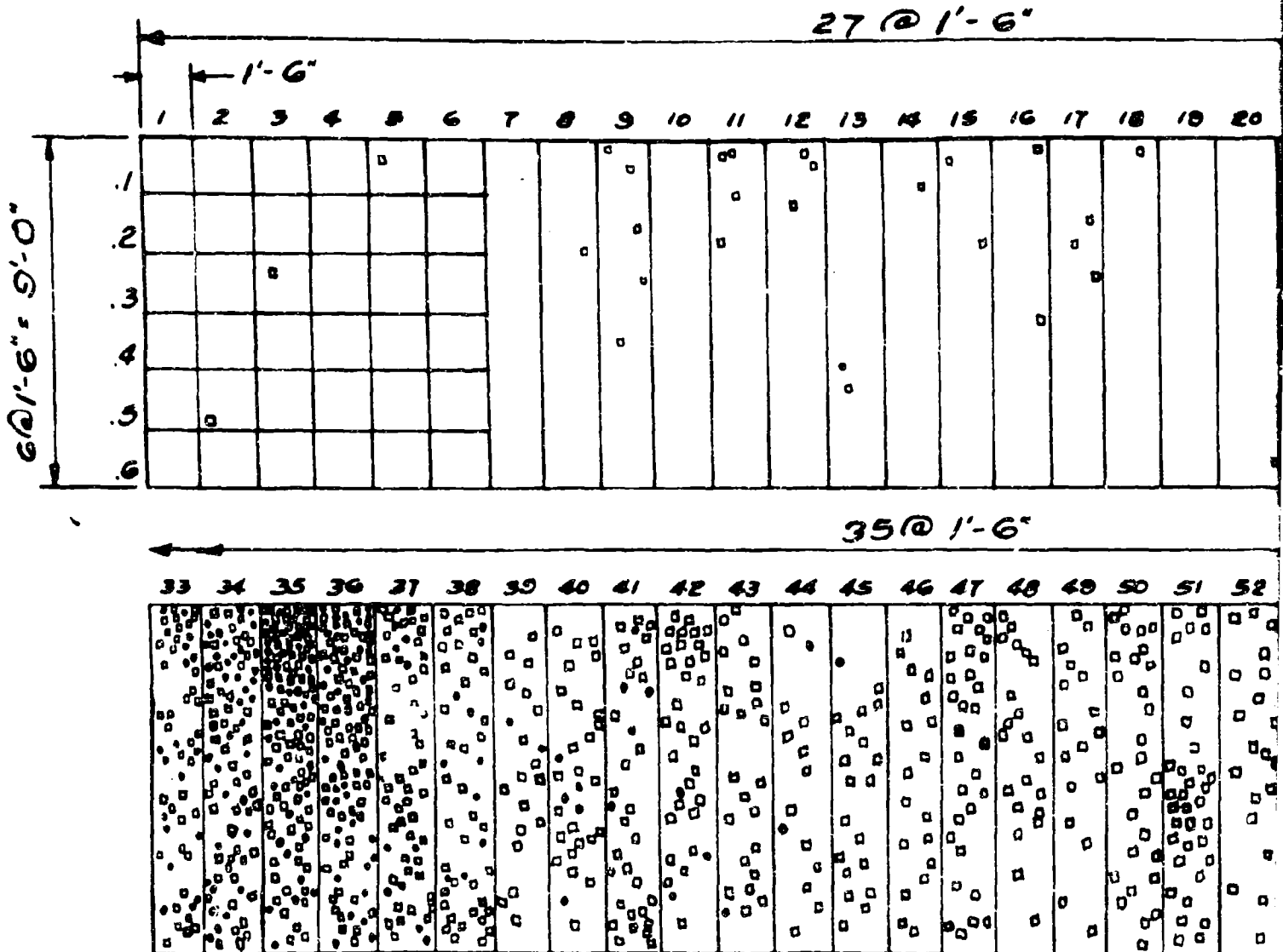
ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
cont 63.2			6	3	2
			3	2	2
			2	1	1
			3	3	4
			4	2	4
			3	2	2
			5	3	2
			3	2	2
			5	1	1
			5	3	1
			3	2	2
			2	1	1
			3	1	2
			5	3	3
			2	2	2
Total		3			19
63.3			4	3	2
			4	3	3
			2	2	1
			2	1	1
			1	1	1
			4	2	5
			2	1	1
			2	1	1
			1	1	1
Total					9
TOTALS					
60' Radius	101				640

CONFIDENTIAL

# PANEL A

30 FT RADIUS 180° AREA



1' NO. 3 PINE BOARDS (DRESSED) PLACED VER

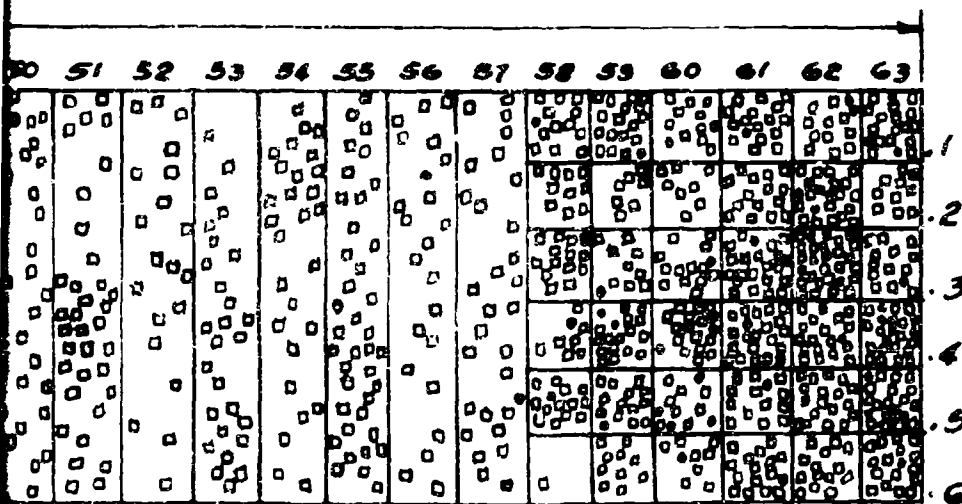
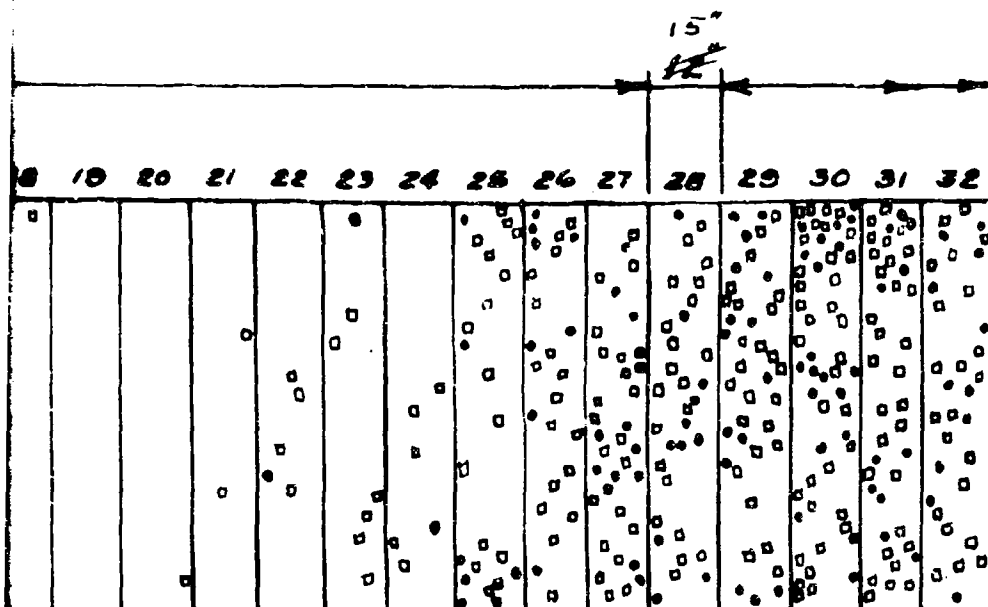
DATE - 12 JUNE 52 RD. NO. 11  
SHELL, 122MM, SOVIET  
POSITION OF SHELL - HORIZONTAL

● PERFORATION 3  
□ PENETRATIONS 15

CONFIDENTIAL

30° ARC

2



D VERTICALLY.

CN 319  
NS 1518

RANGE OPERATIONS SECTION	
LAYOUT OF PANELS FOR NUMBER AND DISTRIBUTION OF FRAGMENTS (30 FT. RADIUS)	
ABERDEEN PROVING GROUND MD. OCT 27, 1944	1057A APG 11876-15 PR



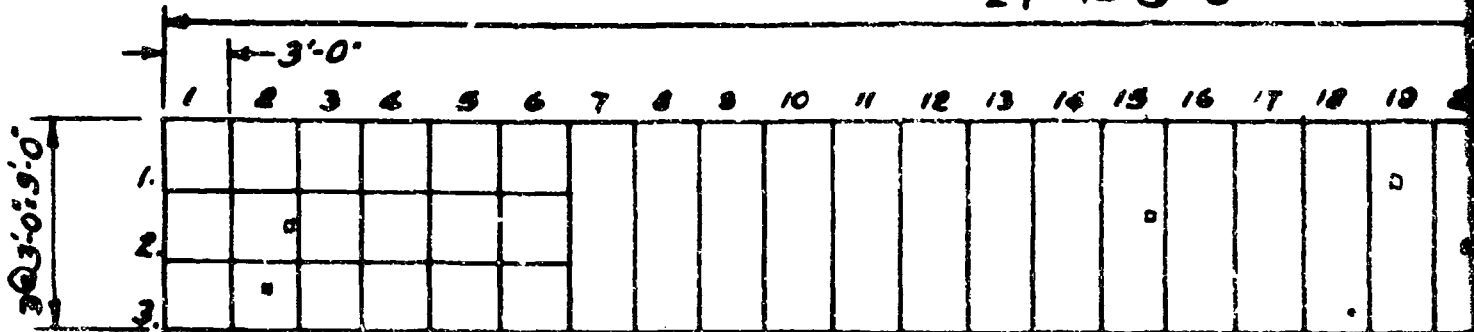
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SECTION

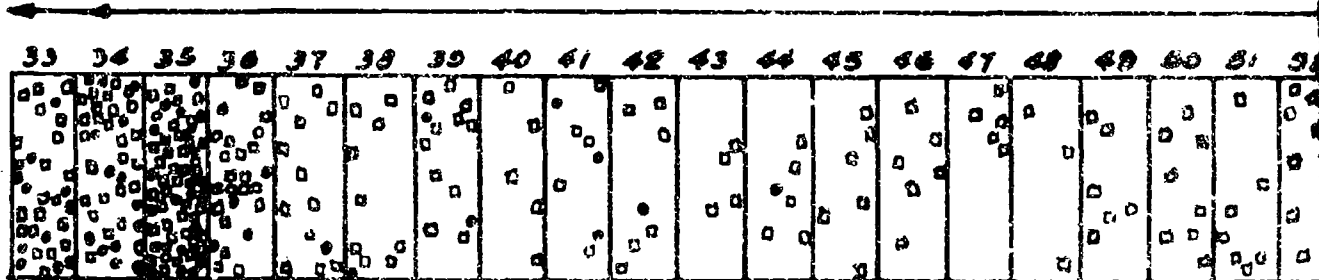
PANEL B

60 FT. RADIUS 180° AR

27 @ 3'-0"



35 @ 3'-0"

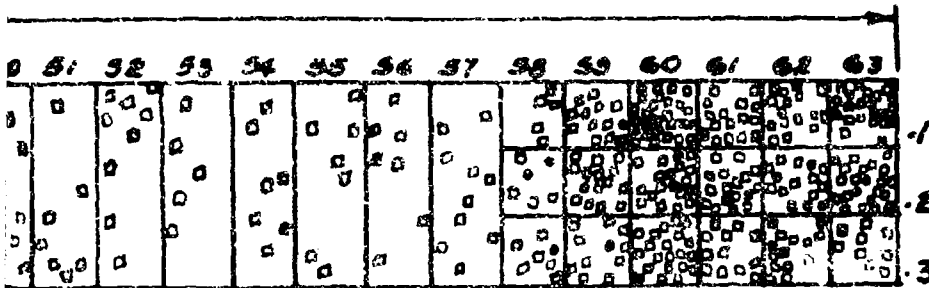
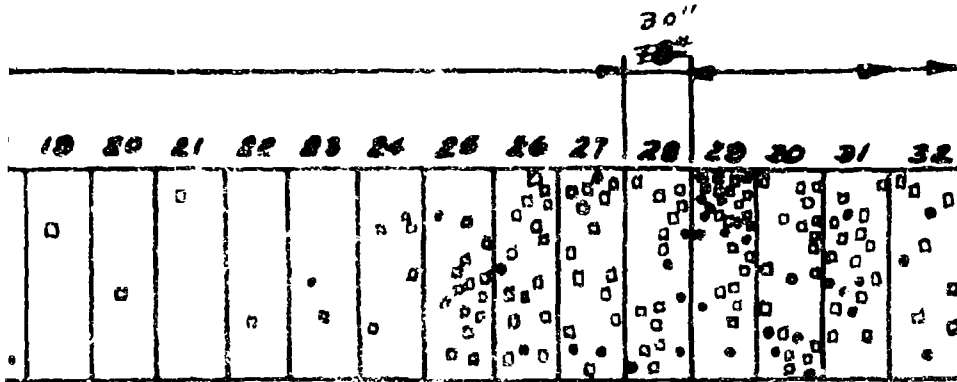


1" NO. 3 PINE BOARDS (DRESSED) PLACED VE

DATE - 12 JUNN 52      RD. NO 11  
 SHELL, 122 MM, SOVIET  
 POSITION OF SHELL - HORIZONTAL

● PERFORATIONS - 10  
 □ PENETRATIONS - 64

1° ARC



D VERTICALLY.

2

- 101  
- 640

RANGE OPERATIONS SECTION	
LAYOUT OF PANELS FOR NUMBER AND DISTRIBUTION OF FRAGMENTS (60 FT. RADIUS)	
ARDEN PROVING GROUND, MD OCT. 27, 1944	APG 11876-14 PR

165B

10  
FILING RECORD NO. 8-11023  
ENCLOSURE 3

ROUND NO. 17

4 June 1943

SHELL, 100mm, Soviet  
MODEL, 3-412A, Ammonium Nitrate 50% - TNT 10%

SHELL MARKINGS

DATE

515  
4-45  
210

MARKS

(none)

BASE

(checked long)

Shell has one split rotating band.

Weight of Shell w/o fuze - 14.01 lbs.  
w/ fuze - 14.11 lbs.

Distance from shell to the center of the 3.00" aluminum flash target - 20.75 ft.

Shell before firing is a 100mm. M. 100mm. No. 40117.

Recovered from the air and arrived with the shell in  
the target area.

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# FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet ,AT/90 Side Recovery Box Data

Proof Director Mr. O. L. Rogers Date Fired 4 June 1955

Distance from detonation point to target 22.75 feet. Round No. 17

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
1	N.R.		17	N.R.		33	N.R.	
2	0+		18	21	2143	34	11	
3	N.R.		19	2		35	4(2)	2483
4	0+		20	N.R.		36	N.R.	
5	3		21	3	2607	37	0+	2565
6	0+		22	1		38	N.R.	
7	6	2573	23	N.R.		39	40	2696
8	N.R.		24	2	2794	40	N.R.	
9	N.R.	2407	25	14	2745	41	9	2524
10	1		26	12		42	N.R.	
11	N.R.		27	3		43	N.R.	
12	N.R.		28	N.R.		44	N.R.	2483
13	3	2562	29	N.R.		45	N.R.	
14	0+		30	0+		46	N.R.	
15	N.R.		31	53	2483	47	10	2745
16	N.R.		32	N.R.		48	5	

Average velocity 2565 ft/sec.

NV - no velocity recorded.

NR - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than + 3.8 % for the highest velocity and + 3.3 % for the lowest velocity.

Sheet 8 of 26



# FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet

Side Recovery Box Data

Proof Director Mr. O. L. Rogers

Date Fired 4 June 1953

Distance from detonation point to target 22.75 feet. Round No. 17

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
97	8		113	1		129	0+	
98	31	2607	114	N.R.		130	8	
99	N.R.		115	3		131	N.R.	
100	N.R.		116	21		132	0+	
101	N.R.		117	N.R.		133	N.R.	
102	N.R.		118	46		134	5	
103	N.R.		119	9		135	9	
104	N.R.		120	4	2335	136	5	
105	N.R.		121	1	2524	137	N.R.	
106	N.R.		122	8	2524	138	4	2565
107	3	2524	123	N.R.		139	7	
108	14	2696	124	54		140	35	2483
109	N.R.		125	N.R.		141	N.R.	
110	5		126	4		142	0+	
111	N.R.		127	11	2696	143	26	
112	N.R.		128	81	2696	144	N.R.	

Average velocity 2565 ft/sec.

NV - no velocity recorded.

NR - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than + 3.8 % for the highest velocity and + 3.3 % for the lowest velocity.

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# FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet Side Recovery Box Data

Proof Director Mr. O. L. Rogers Date Fired 4 June 1953

Distance from detonation point to target 22.75 feet. Round No. 17

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
145	31	2607	161	N.R.		177	N.R.	
146	4		162	10		178	N.R.	
147	N.R.		163	2	2235	179	0+	
148	17	2565	164	6	2696	180	142	
149	5		165	20(2)	2652	181	N.R.	
150	6		166	1		182	N.R.	
151	62	2696	167	N.R.		183	N.R.	
152	0+		168	N.R.		184	N.R.	
153	13		169	10		185	2	
154	40		170	2		186	17	2006
155	14	2565	171	2		187	144	
156	1		172	219		188	N.R.	
157	N.R.	2301	173	58(2)	2235	189	9	
158	N.R.		174	N.R.		190	3	
159	5(2)	2565	175	95		191	3	
160	7		176	4		192	N.R.	

Average velocity 2565 ft/sec.

N7 - no velocity recorded.

NR - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than  $\pm$  3.8 % for the highest velocity and  $\pm$  3.3 % for the lowest velocity. 4 8

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CONFIDENTIAL

17. 11. 1941

### Side Recovery Box Data

Date Fired 4 June 1953

Distance from detonation point to target 22.75 feet. Round No. 17

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
193	N.R.	2565	209	7		225	5	
194	66(2)	2565	210	N.R.		226	12	
195	41		211	22		227	0+	
196	0+		212	17		228	3	
197	N.R.		213	21		229	6	
198	N.R.		214	N.P.		230	33(2)	
199	73		215	43		231	1	
200	N.R.		216	N.R.		232	7	
201	N.R.		217	N.R.		233	5	
202	8		218	73(3)		234	0+	
203	4	2268	219	30		235	3	
204	23		220	N.R.		236	12	
205	3		221	N.R.		237	120	
206	6		222	N.R.		238	9	
207	N.R.		223	N.R.		239	N.R.	
208	N.R.		224	2		240	N.R.	

(2) - total weight of two pieces.

(n) - total weight of n pieces.

NR - not recovered.

Individual velocity inaccuracies are less than  $\pm \frac{3.8}{8} \%$  for the highest velocity and  $\pm \frac{3.3}{5} \%$  for the lowest velocity. ~~CONFIDENTIAL~~

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# FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet Side Recovery Box Data

Proof Director Mr. O. L. Rogers Date Fired 4 June 1953

Distance from detonation point to target 22.75 feet. Round No. 17

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
241	N.R.		257	N.R.		273	47	
242	N.R.		258	N.R.		274	230(2)	
243	N.R.		259	17		275	7	
244	2		260	45		276	N.R.	
245	N.R.		261	N.R.		277	2	
246	1		262	22		278	N.R.	
247	27		263	N.R.		279	6	
248	2		264	3	2532	280	4	
249	1		265	5		281	38	
250	5		266	43		282	13	
251	N.R.		267	24		283	165	
252	7		268	9		284	34	2371
253	N.R.		269	21		285	13	
254	10		270	10		286	74(2)	
255	22		271	10		287	2	
256	47		272	4		288	37	

Average velocity 2565 ft/sec.

NV - no velocity recorded.

NR - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than  $\pm$  3.8 % for the highest velocity and  $\pm$  3.3 % for the lowest velocity. 6 8

Sheet 13 of 26

CONFIDENTIAL

# FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet

Side Recovery Box Data

Proof Director Mr. O. L. Rogers

Date Fired 4 June 1953

Distance from detonation point to target 22.75 feet. Round No. 17

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
289	28		305	0+		321	0+	
290	N.R.		306	N.R.		322	N.R.	
291	21		307	N.R.		323	4	
292	9		308	11(2)	2607	324	N.R.	
293	1(3)		309	N.R.		325	N.R.	
294	25		310	7	2696	326	123	
295	29		311	6		327	N.R.	2745
296	9	2445	312	2	2524	328	3	
297	28		313	1		329	N.R.	2483
298	3		314	3		330	N.R.	
299	43(2)		315	2		331	N.R.	
300	3		316	3		332	N.R.	
301	3		317	3		333	6	2696
302	21		318	N.R.		334	N.R.	
303	9		319	12		335	N.R.	
304	37		320	31		336	N.R.	

Average velocity 2565 ft/sec.

NV - no velocity recorded.

NR - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than + 3.8 % for the highest velocity and + 3.3 % for the lowest velocity. 7 8

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SECRET    OQ    A618076N    P901    42    042-42    42    354

**CONFIDENTIAL**

114

PENETRATION OF SHELLS IN PANELS

LOT 464

DATE 4 June 53

FIRING NO. 20 NOV 55

SECRET NUMBER

PENETRATIONS OF SHELL 122mm, D-452A      LOADED AT/90

Sheet 1 of 34

~~XXXXXXXXXXXX~~ Round No. 17

Soviet  
IN PANELS WITH RADIUS OF 30' AND FEET

2014 11 14 14:14:14

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
2.3			1	1	1
Total					1
7			1	1	1
Total					1
8			2	1	2
Total					1
9			2	1	1
			3	2	2
Total					2
12			2	1	1
Total					1
14			1	1	2
Total					1
17			2	1	1
			4	2	2
			1	1	2
Total					3
19			3	2	2
			3	3	1
			1	1	1
Total					3

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
20	6	4	1	1	1
	20	6	1	1	1
Total		2			2
21			2	2	2
			2	1	1
Total					2
22			1	1	1
			3	2	1
			3	1	2
			3	2	2
Total					4
23	7	6	3	2	2
	12	4	1	1	1
			4	2	2
			1	1	1
			1	1	1
			1	1	2
			2	1	1
			2	1	2
			1	1	1
			2	1	1
			2	1	2
			2	1	1
			1	1	1
			2	1	1
			2	1	2
Total		2			14

ORDG-737 10 FEB 48  
FORMERLY SPOTZ-F-291

# PENETRATIONS OF SHELLS IN PANELS

LOT NO. 0

04 June 53

FIRING ORDER NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Sheet 2 of 34

Soviet  
IN PANELS WITH RADIUS OF 30' AND FEET

Round No. 17

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
24	8	5	2	1	1				1	1	1
	6	5	3	2	3				3	3	4
	4	4	2	1	1				1	1	1
	4	3	1	1	1				4	3	6
	3	2	4	2	4				2	1	2
			2	2	2				1	1	1
			1	1	1				3	2	5
			2	2	1				1	1	1
			1	1	2				1	1	1
			7	4	5				4	2	6
			1	1	1				1	1	1
			2	1	1				2	2	4
			3	3	3				4	2	4
			1	1	1				1	1	1
			2	2	3				1	1	1
			3	2	3				2	2	2
			3	2	4				3	2	2
			3	2	3	Total	6				24
			3	2	6						
			2	1	1	25	3	2	2	2	2
			2	1	2		3	2	2	1	2
			2	1	1		7	4	2	1	1
			2	1	2		4	3	4	3	4
			1	1	1		5	4	2	2	2
			2	2	2		5	4	2	1	1
	5				25		19	9	1	1	1
							5	4	1	1	1
25	4	4	3	2	3		6	4	3	1	3
	6	4	2	1	1				3	3	4
	7	4	1	1	2				1	1	2
	7	6	1	1	2				4	4	4
	13	12	2	1	2				1	1	1
	6	5	2	1	2				1	1	2
			2	1	2				1	1	1

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GPO: 737 10 FEB 48 FORMERLY SPOT-P-201		PENETRATIONS SHELLS IN PANELS		LOT NUMBER FIRING ID NUMBER PRIORITY NUMBER	DATE 4 June 53
PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90 SOVIET				<del>XXXXXXXX</del> Sheet 3 of 34 <del>XXXXXXXX</del> Round No. 17 SHELL NUMBER ROCKET NUMBER	
IN PANELS WITH RADII OF 30' AND FEET					

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	1	2
			1	1	1
			2	2	2
			3	2	4
			2	1	2
			1	1	1
			2	1	1
			1	1	1
			1	1	1
			2	2	4
			2	1	1
			2	1	1
Total	9				27
27	5	4	3	2	2
	5	4	2	1	2
	4	2	1	1	1
	6	4	1	1	2
	5	3	3	1	2
	6	4	3	1	4
	8	4	3	2	4
	4	4	4	3	3
	4	3	2	1	2
	8	6	2	2	2
	3	3	4	2	2
	6	5	3	3	3
			2	1	1
			2	2	3
			3	2	3
			1	1	1
			1	1	1
			3	2	2
			1	1	1
			4	3	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			5	4	4
			3	2	4
			1	1	1
			1	1	2
			2	2	2
			3	2	3
			4	3	3
			2	2	3
			3	3	5
			1	1	1
			3	2	3
Total	12				31
28	6	5	2	1	2
	5	5	1	1	1
	15	6	1	1	1
	9	5	1	1	1
	10	4	4	2	5
	10	5	3	3	5
			4	2	4
			4	2	5
			1	1	1
			3	2	3
			1	1	1
			1	1	2
			3	2	2
			4	3	5
			4	2	2
			4	3	3
			3	2	3
			1	1	1
			2	1	1
			1	1	1
			1	1	1

CRS-737 18 FEB 48  
FORMERLY SPOTZ-P-201

# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

FIRING RANGE NUMBER

PRIORITY NUMBER

DATE 4 June 53

PENETRATIONS OF SHELL 122mm- O-462A LOADED AT/90

SHEET 4 of 34

ROUND NO. 17

IN PANELS WITH RADIUS OF 30' AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
Total		6			21
29	5	5	3	2	5
	10	4	2	2	2
	6	5	3	2	3
	13	5	2	2	4
	4	3	2	1	2
	5	3	5	4	6
	4	3	3	1	2
	5	3	3	2	2
	12	6	3	2	2
	4	4	1	1	1
	7	3	2	1	1
	9	4	1	1	1
	7	5	4	3	6
	6	5	2	2	2
			1	1	1
			4	3	2
			1	1	1
			2	1	1
			2	2	3
			2	2	1
			1	1	1
			1	1	1
			5	3	8
			3	2	4
			2	1	1
			1	1	2
			3	2	3
			2	3	2
			3	2	2
			3	2	6
			3	2	4
			4	2	6

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	1	1
			4	3	3
			2	1	1
			3	2	2
			3	2	3
			3	1	1
			2	1	2
			2	1	1
Total		14			40
30	7	4	2	1	2
	10	6	3	2	2
	6	4	3	2	2
	4	4	2	1	1
	8	6	1	1	1
	5	3	1	1	2
	5	3	2	2	2
	4	4	2	1	2
	8	6	4	3	3
	7	5	1	1	1
	6	4	2	1	1
	8	7	2	1	1
	12	7	1	1	1
	12	9	2	1	2
	4	4	2	1	1
	7	3	2	2	2
	8	4	2	2	2
	8	5	1	1	1
	5	3	1	1	1
	11	8	6	2	8
	6	4	5	3	7
	6	5	2	1	2
	4	3	1	1	1
			3	2	3

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FORMERLY SPOTZ-P-201

# PENETRATIONS SHELLS IN PANELS

LOT NUMBER

FIRING RANGE NUMBER

PRIORITY NUMBER

DATE 4 June 57

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

IN PANELS WITH RADIUS OF 30' AND FEET

SHEET NUMBER Sheet 5 of 34

SHELL NUMBER Round No. 17

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			3	2	3
			1	1	1
			1	1	1
			1	1	2
			2	2	4
			1	1	1
			4	3	3
			1	1	1
			1	1	1
			1	1	1
			1	1	1
			3	1	2
			1	1	1
			2	1	1
			4	3	6
			3	2	2
			1	1	1
			3	2	5
			4	3	6
			3	1	4
Total		23			44
31	6	4	3	3	2
	6	5	3	2	4
	5	3	2	1	1
	6	6	3	2	5
	8	4	3	2	3
	5	3	2	1	3
	5	3	3	2	6
	8	5	4	3	2
	9	7	3	2	5
	12	6	3	2	4
			1	1	1
			3	2	7

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	1	1
			1	1	1
			3	2	3
			3	2	4
			2	1	1
			4	3	3
			1	1	1
			5	3	3
			1	1	2
			2	1	3
			4	3	3
			1	1	1
			3	2	4
			8	4	6
			8	3	2
			10	7	2
			8	5	2
			1	1	1
			1	1	1
			2	1	1
			1	1	1
			3	3	4
			3	2	3
			3	2	5
			3	2	1
Total		10			37
32	3	2	4	3	4
	12	8	2	1	1
	4	3	3	3	3
	9	5	3	3	6
	10	6	3	2	1
	11	9	1	1	1
	5	3	1	1	1



ORONG-787 10 FEB 48  
FORMERLY SPOTZ-P-281

# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 4 June 53

FIRING RECORD NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Sheet 6 of 34

Round No. 17

IN PANELS WITH RADIUS OF 30' AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	1	1
			3	2	2
			3	2	4
			1	1	2
			4	2	2
			1	1	2
			2	2	3
			2	2	3
			5	2	2
			1	1	1
			2	1	1
			3	1	1
			6	2	2
			2	2	3
			1	1	2
			1	1	1
			2	3	3
			5	3	3
			2	1	2
			2	2	2
			1	1	2
			5	4	6
			3	2	3
			3	1	1
			1	1	1
Total		7			32
33	9	8	2	2	2
	5	4	1	1	1
	7	4	1	1	1
	8	5	1	1	1
	5	4	2	1	1
	6	4	2	2	4
	4	4	3	2	3

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	15	8	1	1	1
	4	4	4	4	4
	5	3	2	2	2
	10	6	3	3	4
	10	5	7	3	7
	5	4	3	1	1
	6	3	2	1	1
	10	7	3	2	4
	13	5	3	2	2
	4	4	1	1	1
	15	7	1	1	1
	4	3	2	1	2
	8	4	1	1	1
	6	4	5	3	8
	4	4	5	3	6
	17	7	5	4	6
			9	4	4
			1	1	1
			3	2	4
			4	1	1
			1	1	1
			4	2	2
			2	1	1
			2	1	1
			2	1	1
			5	5	2
			3	2	2
			2	1	1
			2	1	2
			3	1	2
			4	2	2
			4	3	4
			4	2	4

FORM 757 10 FEB 48  
FORMERLY SPOTZ-F-201

# PENETRATIONS SHELLS IN PANELS

LOT NUMBER

DATE 4 June 53

FIRING POSITION NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, o-462A LOADED AT/90

Sheet 7 of 34

Round No. 17

IN PANELS WITH RADIUS OF 30' AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1		8	5	1	1	1
			3	2	3		4	3	3	2	2
			3	1	2		8	6	1	1	1
			2	1	1		9	6	2	2	2
Total		23			45		8	4	3	2	2
							10	4	1	1	2
34	4	3	3	3	2		14	6	3	2	4
	13	5	2	2	1		3	3	5	3	2
	6	4	2	1	1		5	4	4	3	6
	8	4	3	2	2		6	4	4	2	2
	5	4	3	2	4		10	6	1	1	1
	4	3	1	1	1		8	3	2	1	2
	10	4	1	1	1		6	4	4	4	6
	10	4	3	2	2		7	7	3	2	2
	10	5	3	1	2		6	4	3	2	2
	8	6	1	1	1		8	4	3	2	3
	7	5	1	1	1		5	3	2	2	1
	4	3	2	1	1		12	6	1	1	1
	9	4	1	1	1		5	5	4	2	2
	8	4	1	1	1		12	4	1	1	1
	17	6	2	1	1		8	5	2	1	1
	7	5	2	1	1		6	3	2	1	3
	6	5	2	1	1		7	7	3	2	2
	5	3	2	1	1		10	5	4	3	4
	17	6	2	2	2		29	7	4	3	4
	3	2	3	2	3		3	2	2	1	1
	6	5	8	2	2		18	7	2	1	1
	5	4	1	1	1		14	5	6	4	5
	6	4	2	1	1		15	5	1	1	1
	8	5	3	2	2		17	5	3	3	3
	3	3	5	3	3		10	5	2	1	3
	11	6	4	2	6		5	3	2	2	2
	16	6	2	2	2		10	5	4	3	2
	8	3	4	3	4		6	4	1	1	1

# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 4 June 53

FIRING NO AND NUMBER

PRIORITY NUMBER

Sheet 8 of 34

Round No. 17

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, O-432A LOADED AT 90

Soviet IN PANELS WITH RADIUS OF 30" AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	5	3	2	1	1
	16	13	3	2	4
	12	5	5	3	5
	9	5	2	2	2
			2	1	1
			2	1	2
			2	2	2
			3	2	2
			4	3	4
			1	1	1
			2	2	4
			1	1	1
			5	3	5
			3	3	4
			2	1	1
			4	3	3
			1	1	1
			1	1	1
			2	2	2
			1	1	1
			1	1	1
			3	2	1
			4	3	5
			3	1	2
			1	1	1
Total		66			87
35	5	4	2	2	2
	10	5	4	2	4
	13	7	1	1	2
	6	4	1	1	1
	18	5	1	1	1
	10	6	2	1	1
	3	2	2	2	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	8	3	1	1	1
	7	4	4	4	4
	5	3	2	1	1
	9	6	5	4	5
	5	4	1	1	1
	10	5	1	1	1
	10	8	1	1	1
	10	5	3	1	3
	7	4	4	3	4
	9	5	1	1	1
	13	9	1	1	1
	6	5	5	3	6
	12	6	3	2	2
	7	4	1	1	1
	5	4	1	1	1
	15	6	2	2	4
	4	3	3	2	3
	5	3	8	4	4
	8	7	2	1	2
	4	3	4	3	6
	4	3	1	1	1
	10	5	1	1	1
	10	3	2	1	1
	10	4	2	2	3
	6	4	4	2	2
	9	4	3	1	2
	9	4	4	3	4
	9	4	4	3	4
	7	5	2	1	1
	6	3	2	1	2
	8	4	3	2	2
	5	4	1	1	1
	6	6	1	1	3
	8	7	4	1	2

# PENETRATIONS OF SHELLS IN PANELS

NOT NUMBER

DATE 4 June 53

FIRING NO NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Sheet 9 of 34

Soviet  
IN PANELS WITH RADIUS OF

30'

AND

FEET

Round No. 17

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	10	5	2	1	2				3	1	1
	9	5	1	1	1				6	3	2
	8	5	2	1	2				3	3	6
	7	5	3	2	2				3	1	2
	20	5	3	2	1				3	2	1
	6	5	4	2	3				4	2	1
	10	6	3	2	2				4	3	6
	11	5	3	1	1				3	1	2
	11	7	4	3	5				1	1	1
	5	4	2	2	2				4	3	3
	9	7	1	1	1				1	1	1
	15	9	1	1	1				2	2	3
	11	5	3	1	2				2	2	2
			3	2	2				2	1	1
			2	1	2				8	2	5
			1	1	1				6	4	6
			1	1	1				3	2	4
			5	3	5				1	1	1
			1	1	1				3	3	5
			2	1	2				2	1	4
			2	1	1				2	2	3
			2	2	2				2	2	2
			3	2	4				3	2	2
			3	2	3				5	4	5
			1	1	1				2	1	1
			1	1	1				2	2	3
			1	1	1				3	2	2
			3	2	2				4	3	3
			2	2	1				4	2	2
			1	1	1				1	1	1
			4	2	2	Total		54			105
			1	1	1						
			1	1	1	36	12	9	2	1	2
			3	2	2		8	6	1	1	1

# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 4 June 55

FIRING EQUIPMENT NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A

LOADED AT/90

Sheet 10 of 34

Round No. 17

Soviet

IN PANELS WITH RIGID OF

301

AND

FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	9	5	1	1	1
	7	5	3	2	1
	9	5	1	1	1
	5	4	1	1	1
	5	4	2	2	8
	4	3	3	2	5
	8	4	2	1	1
	21	14	3	2	3
	7	5	4	3	4
	5	3	2	2	2
	11	4	1	1	1
	7	5	2	2	1
	6	3	2	1	3
	5	2	3	2	2
	23	7	1	1	2
	10	7	1	1	1
	4	2	2	1	2
	4	2	1	1	1
	14	11	3	2	5
	4	2	4	3	2
	4	2	4	3	4
	4	2	3	3	2
	7	4	2	1	1
	3	2	1	1	2
	12	7	1	1	1
	6	5	1	1	1
	5	3	2	1	1
	4	3	4	3	2
	6	3	3	2	3
	6	3	5	4	6
	9	6	3	2	2
	7	4	1	1	1
	13	5	3	2	2
	7	4	3	2	3

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	4	4	2	2	2
	9	5	2	1	2
	6	3	2	1	2
	5	2	1	1	1
	8	3	3	2	3
	7	4	3	2	5
			4	3	6
			3	2	6
			1	1	1
			3	2	4
			1	1	1
			1	1	1
			2	1	4
			4	3	4
			1	1	1
			3	3	6
			4	3	8
			1	1	2
			1	1	1
			3	2	4
			1	1	1
			3	1	1
			2	1	2
			1	1	1
			2	1	1
			2	1	3
			3	2	4
			1	1	1
			1	1	1
			2	1	1
Total		42			66
37	9	4	3	2	2
	5	4	1	1	1

PENETRATIONS SHELLS IN PANELS

LET NUNN

FIRING 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

DATE 4 June 55

PRIORITY NUMBER

Sheet 11 of 34

~~XXXXXXXXXX~~ Round No. 12

## ROCKET SUMMER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet

IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	7	5	3	2	1
	10	6	1	1	1
	5	4	3	2	4
	11	6	1	1	2
	12	5	5	3	3
	8	5	1	1	1
	6	4	2	1	1
			2	1	4
			3	3	2
			3	2	1
			2	1	1
			1	1	1
			4	3	6
			4	4	5
			2	2	1
			2	1	1
			3	2	1
			1	1	1
			1	1	1
			2	2	1
			2	1	1
			2	1	1
			4	3	4
			3	3	6
			2	2	
			2	1	
			3	1	1
			4	2	1
			2	2	2
			4	2	4
			7	4	8
			6	4	8
			2	1	2
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			3	2	1
Total		9			37
38	8	5	3	2	2
	8	5	4	2	3
	8	5	2	2	1
	5	4	3	2	1
	6	4	3	2	4
	5	4	2	2	2
	12	9	3	3	1
			2	1	1
			1	1	1
			8	4	7
Total		7			10
39	6	4	2	3	4
	9	5	3	1	1
	10	3	6	4	4
	9	5	4	3	4
			2	1	2
			7	5	4
			2	1	1
			4	3	4
			1	1	1
			4	3	2
			4	3	4
			4	2	2
			2	2	1
			3	2	4
			2	2	2
			2	1	1
			1	1	1
			4	3	2
			2	2	3

# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 4 June 53

FIRING RANGE NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm o-4524 LOADED AT/90

Sheet 12 of 34

IN PANELS WITH Soviet

30'

AND

FEET

Round No. 17

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			5	4	5
			5	4	4
			4	3	2
			1	1	1
			3	2	3
			3	2	6
			5	4	6
			1	1	1
Total		4			27
40	5	4	4	1	1
	6	4	4	3	2
	6	5	1	1	1
	11	5	1	1	1
	5	4	3	2	3
	11	5	6	4	2
			3	2	3
			3	2	4
			5	5	4
			4	3	3
			3	2	3
			3	3	4
			1	1	1
			2	2	3
			3	2	2
			2	2	1
			1	1	1
			1	1	1
			3	3	3
			2	1	1
			2	1	1
			3	2	6
			2	1	2
			4	3	7

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
Total		6			24
41	4	3	3	2	3
	8	3	4	3	2
	5	4	2	1	1
	9	4	2	1	2
	14	5	1	1	1
	6	4	3	2	2
	8	5	4	3	3
			3	2	4
			3	2	1
			5	3	3
			3	2	2
			2	2	3
			1	1	1
			4	2	4
			1	1	1
			1	1	1
			3	2	3
			2	1	2
			2	1	1
Total		7			19
42	8	4	5	3	2
	13	9	3	2	1
	7	4	1	1	1
			3	2	2
			3	2	1
			3	3	1
			3	2	2
			2	1	1
			3	2	1
			3	2	2
			2	1	1

# PENETRATION OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, 0-462A LOADED AT/90

Soviet

IN PANELS WITH RASII OF 301 AND FEET

LOT NUMBER

DATE 4 June 53

FIRING AND NUMBER

PRIORITY NUMBER

~~XXXXXXXXXX~~ Sheet 13 of 34

~~XXXXXXXXXX~~ Round No. 17

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	1	2
Total		3			12
43	11	5	2	1	2
			1	1	1
			3	2	1
			2	1	1
			3	2	1
			1	1	1
			2	1	1
Total		1			7
44			1	1	1
			3	2	2
			3	2	3
			1	1	1
			2	2	2
			6	4	4
			4	2	1
			2	2	2
			5	3	3
			5	3	3
Total					10
45			4	2	2
			1	1	1
			2	2	2
			3	2	2
			2	2	1
			4	3	2
			4	3	2
			3	2	3
			1	1	1
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			3	2	1
			3	2	2
			2	1	1
			3	2	2
			5	3	6
			1	1	1
Total					16
46			3	1	1
			1	1	1
			1	1	1
			5	2	2
			2	2	1
			1	1	1
			2	1	1
			2	2	1
Total					8
47	5	4	3	2	1
			2	1	1
			3	2	2
			3	2	2
			3	2	2
			1	1	1
			2	1	1
			4	2	4
			1	1	1
			4	3	4
			2	1	1
			6	4	5
			5	3	4
			6	4	4
Total		1			14



# PENETRATION OF SHELLS IN PANELS

LOT NUMBER

DATE 4 June 53

FIRING NO. NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet

Sheet 14 of 34

Round No. 17

IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
48			3	2	2
			3	1	1
			3	2	1
			2	2	1
			8	2	4
			4	4	2
			3	2	3
			2	1	1
			1	1	1
			1	1	1
Total					10
49			2	2	2
			2	1	1
			2	1	1
			1	1	1
			1	1	1
			2	2	2
			3	3	5
			2	1	1
			3	1	1
			3	2	1
			3	2	3
			3	3	1
			2	1	1
			1	1	1
			3	2	2
			1	1	1
			2	1	1
Total					17
50	5	3	2	1	1
	3	2	1	1	1
	9	7	2	2	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			1	1	1
			2	2	1
			2	1	1
			2	2	3
			2	2	1
			2	2	1
			2	2	2
			1	1	2
			2	1	1
			4	4	5
			1	1	2
			1	1	1
			3	1	1
			1	1	1
			2	2	1
			5	4	5
			5	3	2
Total		3			21
51	6	5	2	1	1
			2	1	1
			3	2	1
			2	1	1
			2	1	1
			1	1	1
			3	1	2
			4	2	2
			2	1	2
			3	2	2
			1	1	1
			3	3	4
			2	1	1
			3	3	3

# PENETRATION OF SHELLS IN PANELS

LOT NUMBER

DATE 4 June 53

FIRING NO NUMBER

PRIORITY NUMBER

XXXXXXXXXX Sheet 15 of 34

XXXXXXXXXX Round No. 17

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm. O-462A LOADED AT/90

IN PANELS WITH RADIUS OF Soviet 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			3	2	2
			4	2	2
			2	1	1
			4	4	3
Total		1			18
52	3	3	3	3	4
			2	1	1
			1	1	1
			2	2	1
			1	1	1
			4	2	3
			4	2	2
			4	3	4
			3	1	3
			2	2	1
			1	1	1
			5	3	1
			1	1	1
			1	1	1
			3	2	3
			1	1	1
			3	2	1
			2	1	1
			1	1	1
			1	1	1
Total		1			20
53	9	5	1	1	2
			1	1	1
			1	1	1
			2	2	1
			2	1	1
			2	2	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			3	2	2
			3	2	2
			1	1	1
			3	1	1
			3	2	2
			1	1	1
			3	3	3
			2	1	1
			4	2	6
			2	2	1
			2	1	2
			3	2	2
			1	1	1
			1	1	1
			2	1	1
Total		1			21
54			2	2	2
			2	2	3
			1	1	1
			1	1	1
			3	1	4
			1	1	2
			2	2	1
			1	1	1
			5	3	4
			2	2	2
			1	1	1
			1	1	1
			2	1	1
			5	4	2
			7	4	6
			1	1	1
Total					16

# PENETRATION OF SHELLS IN PANELS

LGT NAME

DATE 4 June 53

FIRING NO NUMBER

PRIORITY NUMBER

Sheet 16 of 34

Round No. 17

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, O-452A LOADED AT/20

Soviet 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
55			4	2	4	56			4	3	3
			3	2	1				2	2	1
			4	2	2				1	1	1
			2	1	1				2	2	2
			1	1	1				2	2	2
			2	2	1				5	4	3
			1	1	1				2	1	1
			2	2	1				1	1	1
			2	2	2				4	2	2
			1	1	1				3	2	3
			4	2	4				3	2	4
			4	3	2				4	3	3
			3	1	1				2	1	1
			2	1	2				1	1	1
			2	1	1				3	1	1
			1	1	1				3	2	3
			4	3	4				2	2	2
			5	2	3				2	1	1
			1	1	1				4	2	2
			2	2	5				1	1	1
			1	1	1				4	1	1
			2	1	1				2	1	1
			4	2	2				3	1	1
			4	2	3				3	1	1
			2	2	1				3	1	1
			2	2	3				3	2	2
			2	1	2				2	2	1
			4	3	2				3	1	3
			3	2	2				1	1	1
			7	5	1				1	1	2
			3	2	3				3	2	3
			1	1	1				1	1	1
Total					32				3	2	1
									1	1	1

# PENETRATION OF SHELLS IN PANELS

LOT NUMBER

DATE 4 June 53

FIRING NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet

Sheet 17 of 34

Round No. 17

IN PANELS WITH RADIUS OF

301

AND

FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			4	3	3
			2	3	7
Total					36
57	6	4	2	1	2
			1	1	1
			5	4	4
			4	2	2
			4	1	2
			8	3	6
			1	1	1
			1	1	1
			2	1	1
			5	4	5
			3	3	3
			2	1	1
			3	3	6
			3	1	1
			1	1	1
			3	2	3
			3	2	4
			5	2	5
			3	2	2
			1	1	1
			1	1	1
			2	2	2
			1	1	1
Total	1				24
58.1			6	3	5
			3	1	1
			2	1	1
Total					7

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
58.2	4	4	2	1	1
			1	1	1
			3	1	3
			3	2	3
Total	1				4
58.3			1	1	1
			3	2	3
			1	1	1
			1	1	1
			3	2	1
			7	2	6
Total					7
58.4			2	2	2
			4	4	5
			1	1	1
			2	2	2
			6	2	6
			1	1	2
			1	1	2
Total					7
58.5	6	4	5	3	3
			3	2	4
			4	3	3
			1	1	1
			3	2	4
Total	1				5
58.6			2	1	1
			1	1	1
			1	1	3

PENETRATION OF SHELLS IN PANELS

LOT NUM

DATE 4 June 53

GIRING AND NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm. 0462A LOADED AT/CO

Sheet 18 of 34

Soviet IN PANELS WITH RADIUS OF 30' AND FEET

Round No. 17

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
Total 58.6					3
59.1			2	1	1
			3	2	2
Total					2
59.2	13	5	5	4	4
			4	2	2
			1	1	1
			2	2	2
Total		1			4
59.3	10	7	1	1	1
			4	3	4
			2	2	2
			5	4	6
			2	2	2
			2	1	1
Total		1			6
59.4			7	4	6
			4	2	2
			3	1	1
			2	1	2
			4	2	4
			5	4	4
			4	3	2
			1	1	1
			2	2	2
Total					9
59.5	12	5	2	1	1
			3	2	2
			4	3	3

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			3	2	3
			5	4	9
			1	1	1
			1	1	1
			1	1	1
			6	4	3
			3	3	4
			3	2	3
			2	2	2
			3	3	5
			4	2	2
Total		1			14
59.6			2	1	1
			5	3	2
			5	3	3
			5	3	2
			4	3	6
			3	1	3
Total					6
60.1	14	6	4	3	3
	11	11	3	3	3
			1	1	1
			7	4	5
			1	1	1
			2	1	2
			2	1	1
			1	1	1
Total		2			8
60.2	8	4	1	1	1
			3	2	2
			1	1	2

ORDBG-757 18 FEB 48  
FORMERLY SPOTZ-P-281

# PENETRATIONS OF SHELLS IN PANELS

LOT NUM

DATE 4 June 53

FIRING RECORD NUMBER

PRIORITY NUMBER

XXXXXXXXXX Sheet 19 of 34

XXXXXXXXXX Round No. 17

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, 0-462A LOADED AT/90

Soviet

IN PANELS WITH RADIUS OF 30" AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			4	2	4
			3	2	3
			4	1	2
			1	1	1
			3	2	2
			3	2	7
Total		1			10
60.3	4	3	3	1	1
			1	1	2
			2	1	1
			2	2	3
			3	2	4
			2	1	1
			4	4	3
			2	1	1
Total		1			8
60.4	6	6	5	4	6
	6	5	1	1	1
			8	2	7
			3	2	1
			1	1	1
			7	2	4
			1	1	1
			1	1	2
			1	1	1
			3	2	4
			6	1	1
Total		2			11
60.5	5	3	5	5	4
			5	3	3

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			5	4	4
			4	4	5
			4	3	2
			1	1	1
			3	2	2
Total		1			8
60.6	12	5	4	2	2
			2	1	1
			4	2	2
			1	1	2
			2	2	2
			1	1	1
			2	2	4
			5	3	4
			2	1	2
			2	1	3
			3	2	2
Total		1			11
61.1	5	4	1	1	1
			1	1	1
			9	6	5
			2	1	2
			5	4	2
			1	1	1
			1	1	1
			4	4	6
			3	1	1
Total		1			9
61.2	8	4	2	1	1
	14	7	1	1	1

# PENETRATION OF SHELLS IN PANELS

LOT NUMBER

DATE 4 June 53

FIRING NO NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Sheet 20 of 34

Round No. 17

IN PANELS WITH RADIUS OF 30' AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			2	1	1
			5	4	3
			12	3	4
			1	1	1
			3	2	2
			4	2	1
			5	3	3
			2	1	2
			1	1	1
			3	1	1
			2	1	2
			1	1	1
			2	1	2
			2	2	2
Total		2			17
61.3	5	4	4	3	2
	14	4	1	1	1
	5	4	1	1	1
	9	4	1	1	1
	6	3	1	1	1
			3	2	4
			1	1	1
			4	3	2
			1	1	1
			1	1	1
			8	3	5
			1	1	1
			5	4	4
			4	3	3
			1	1	1
			2	1	1
Total		5			16

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
61.4	6	4	1	1	1
	4	4	2	1	1
	7	4	1	1	1
	8	4	4	2	2
			1	1	1
			4	2	2
			1	1	1
			5	3	7
			4	2	4
			1	1	1
			4	3	3
			6	4	3
			2	2	1
			2	2	2
			4	3	7
			1	1	1
			7	4	9
Total		4			17
61.5	8	5	2	2	3
	7	4	2	2	1
	11	4	3	2	1
			2	2	1
			2	1	1
			3	2	2
			5	3	7
			1	1	1
			4	2	3
			3	3	4
			3	2	4
			2	2	2
			5	3	6
			2	1	1
			1	1	1

# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 4 June 55

FIRING RECORD NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, 0-462A LOADED AT/90

XXXXXXXXXXXX Sheet 21 of 34

XXXXXXXXXXXX Round No. 17

IN PANELS WITH RADIUS OF Soviet 30' AND FEET

POCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	1	1
Total		3			16
61.6	11	4	1	1	1
	7	5	4	3	2
			4	2	2
			5	3	4
			8	5	7
			4	2	2
			3	3	5
			5	3	4
Total		2			8
62.1	9	5	1	1	1
	5	4	5	4	8
			2	1	2
			1	1	1
			4	3	2
			1	1	1
			8	4	6
			1	1	1
			1	1	1
			2	1	1
			1	1	1
			4	3	4
			2	1	2
			1	1	1
			2	2	1
			1	1	1
			1	1	1
Total		2			17
62.2	6	4	3	2	1
	6	5	4	3	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	14	8	1	1	1
			1	1	1
			1	1	1
			3	2	2
			3	2	2
			3	2	2
			6	4	4
			1	1	1
			3	2	5
			1	1	1
			3	2	1
			6	4	4
			3	1	1
			1	1	1
Total		3			16
62.3	9	4	3	1	1
			4	3	3
			1	1	1
			3	1	1
			2	1	1
			4	4	6
			3	3	2
			3	2	1
			3	3	3
			1	1	1
			8	5	7
Total		1			11
62.4	5	4	2	1	1
	6	3	3	2	2
	10	4	1	1	1
			3	2	4
			4	3	3



# PENETRATION OF SHELLS IN PANELS

LOT NO

FIRING NUMBER

PRIORITY NUMBER

DATE 4 June 60

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Sheet 22 of 34

Round No. 17

IN PANELS WITH RADIUS OF 301 AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	2	2
			10	3	5
			1	1	2
			3	1	1
			4	2	2
			4	3	2
			5	3	3
			1	1	1
			3	2	1
Total		3			14
62.5	7	6	4	3	3
	10	5	4	3	5
	4	2	2	1	1
			5	4	4
			3	2	2
			1	1	1
			5	3	4
			1	1	1
			3	2	1
			4	3	2
			8	3	3
			2	2	3
			2	1	1
			5	4	4
			2	1	2
			2	2	6
Total		3			16
62.6	8	6	1	1	2
	11	6	1	1	1
	14	8	1	1	1
			3	1	1
			2	2	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			3	2	4
			2	2	1
			3	3	1
			2	1	2
			3	3	2
			3	2	5
			1	1	1
			2	1	6
			1	1	1
			1	1	1
			6	4	6
			14	4	5
			3	2	1
			2	1	1
			1	1	1
Total		3			20
63.1			1	1	1
			1	1	1
			3	2	3
			5	5	6
			3	2	3
			1	1	1
			4	3	4
			4	3	4
			5	2	2
			4	3	2
			2	2	1
			3	2	2
			7	3	6
			3	3	2
Total					14

PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 4 June 53

FIRING NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet

IN PANELS WITH RADIUS OF

30'

AND

FEET

Sheet 23 of 34

Round No. 17

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
63.2	12	8	4	3	2
	6	3	4	2	3
	5	4	2	1	2
			4	3	4
			3	2	2
			3	1	1
			1	1	1
			4	3	4
			2	1	1
Total		3			9
63.3	4	3	7	3	4
	10	4	2	1	1
	4	4	2	1	1
	5	4	2	1	1
	5	3	5	4	4
			1	1	1
			2	1	1
			2	1	2
			2	1	1
			2	1	1
			7	3	4
			4	3	2
			3	2	3
			6	3	3
			5	4	4
			3	1	1
			6	2	2
Total		5			17
63.4	12	6	3	2	2
	7	5	3	1	2
	4	4	4	3	2
			3		2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			3	2	1
			5	3	3
			2	1	1
			2	1	1
			3	2	1
			1	1	1
			2	1	1
			4	3	4
			3	2	3
			5	2	4
Total		3			14
63.5	4	3	2	2	2
	3	3	2	1	1
			3	2	2
			7	4	5
			2	1	1
			3	2	2
			6	5	4
			8	4	4
			1	1	1
			3	3	5
			2	1	1
			2	1	1
Total		2			12
63.6	8	6	4	4	6
	5	4	3	2	2
	6	5	3	3	6
			3	2	1
			3	2	2
			3	3	3
			3	2	2
			2	2	2

## PENETRATION OF SHELLS IN PANELS

207 NUM.

DATE 4 June 53

FIRING NUMBER

PRIORITY NUMBER

INTRODUCTION Sheet 24 of 34

Round No. 17

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm. O-462A LOADED AT/90

IN PANELS WITH RADIUS OF 30 INCHES AND FEET

IN PANELS WITH RADIUS OF 30' AND FEET

[illegible]

ORD 54-737 10 FEB 48  
FORMERLY SPOTZ-F 281

# PENETRATION OF SHELLS IN PANELS

LOT NUMBER 1 DATE 4 June 53

FIRING NUMBER

PRIORITY NUMBER

~~XXXXXXXXXX~~ Sheet 25 of 34

~~XXXXXXXXXX~~ Round No. 17

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet IN PANELS WITH RADII OF 60' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
10			4	2	2
Total					1
12			4	2	2
Total					1
15			5	3	4
Total					1
19			1	1	1
Total					1
21			2	2	2
Total					1
22			4	2	4
Total					1
23			5	4	5
			2	1	1
			4	2	4
			4	2	2
Total					4
24	5	4	1	1	1
			2	1	1
			3	2	8
Total		1			3
25			1	1	1
			1	1	1
			4	4	2
			3	2	2
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
Total					5
26	6	4	2	1	1
			2	1	1
			4	3	2
			2	2	1
Total		1			4
27	5	4	1	1	1
	9	5	5	5	3
	8	7	3	3	2
			6	4	4
			1	1	2
			1	1	1
Total		3			6
28	4	4	4	3	4
	9	5	1	1	1
	6	4	1	1	1
	7	6	3	3	2
	5	5	4	3	2
			2	1	2
			3	2	4
			2	2	2
			6	4	3
Total		5			9
29	6	4	2	2	2
	6	4	2	1	1
	6	4	5	4	7
	6	4	2	1	1
	6	5	5	4	5
	16	4	6	3	4
			1	1	1

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ORDN-727 18 FEB 48 FORMERLY SPOTZ-F-291						LOT NUMBER		DATE 4 June 53	
<b>PENETRATION OF SHELLS IN PANELS</b>						FIRING NO NUMBER			
						PRIORITY NUMBER			
PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90						<del>XXXXXXXX</del> Sheet 26 of 34			
Soviet						<del>XXXXXXXX</del> Round No. 17			
IN PANELS WITH RADII OF 60' AND FEET						ROCKET NUMBER			

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			5	3	2
			4	2	2
			3	1	4
			3	2	2
			2	2	2
			3	2	4
			2	1	1
			4	3	6
			5	4	8
			3	1	1
			2	2	4
			3	2	2
			3	2	1
			5	4	4
			5	4	8
			2	1	1
			1	1	1
Total		6			24
30	6	4	1	1	1
	7	4	2	1	1
	8	7	3	2	3
	6	5	1	1	1
	4	4	3	2	1
	7	6	1	1	1
	7	5	1	1	1
	10	5	3	3	2
	6	5	2	2	1
	7	5	1	1	1
			2	2	2
			2	2	1
			3	2	4
			1	1	1
Total		10			14

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
31			2	2	2
			2	1	1
			2	2	3
			2	1	3
			2	2	1
			1	1	1
			1	1	1
			4	2	6
			3	2	2
			5	3	3
			3	3	2
			3	1	1
			3	1	1
			1	1	1
Total					14
32	8	6	1	1	1
	8	3	5	3	5
	7	4	1	1	1
	5	4	2	1	1
	6	3	1	1	1
			4	4	2
			1	1	1
			4	3	1
			2	3	3
			4	3	3
			8	4	6
			4	3	4
			1	1	1
			2	2	2
			3	2	6
Total		5			15
33	6	4	3	3	1

ORD 98-727 10 FEB 48  
FORMERLY SPOTZ-7-201

# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 4 June 53

FIRING RECORD NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, C-4624 LOADED AT/90

~~XXXXXXXX~~ Sheet 27 of 34

Soviet  
IN PANELS WITH RADIUS OF 60' AND FEET

~~XXXXXXXX~~ Round No. 17

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	8	6	4	2	2				3	2	1
	8	4	1	1	1				4	2	1
	11	6	1	1	1				4	2	4
	7	4	6	4	8				4	2	5
	8	4	2	1	1				3	2	2
	7	5	2	2	2				2	2	1
	3	3	6	3	4				1	1	1
	18	6	5	3	8				6	3	5
	7	5	1	1	1				3	1	1
	10	5	4	3	3	Total		12			28
	12	6	2	1	1						
	8	5	3	2	2	35	6	5	6	5	8
	8	4					10	4	1	1	1
Total		14			13		6	4	7	4	7
							10	5	6	3	5
34	7	5	3	2	2		16	5	3	2	2
	27	4	3	2	2		14	7	3	2	2
	20	5	5	3	2		27	7	3	2	1
	23	8	7	4	3		12	5	2	1	1
	4	3	9	3	5		10	8	1	1	1
	7	4	2	2	1		8	5	3	2	1
	11	5	4	3	2		11	6	4	3	2
	12	4	5	4	4		9	6	4	2	2
	7	6	2	1	1		7	4	5	2	4
	4	3	1	1	1		6	4	2	2	1
	20	8	1	1	1		14	14	4	3	2
	14	6	3	1	1		5	4	4	3	5
			3	2	2		9	4	3	3	5
			4	3	3		10	5	1	1	1
			5	4	4		6	3	2	1	1
			2	2	3		11	8	2	1	1
			2	1	2		9	5	2	1	1
			3	1	1				4	2	6
			3	1	2				4	3	2

SECRET

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ORDG-737 19 FEB 49  
FORMERLY SPOTZ-P-281

PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER 1 DATE 4 June 53  
FIRING RANGE NUMBER  
PRIORITY NUMBER  
~~XXXXXX~~ Sheet 28 of 34  
~~XXXXXX~~ Round No. 17  
SHELL NUMBER  
ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, 0-462A LOADED AT/90  
IN PANELS WITH RADIUS OF Soviet 60' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			3	2	2
			4	3	2
			4	2	2
			1	1	1
			3	2	4
			2	2	1
			1	1	1
			3	2	1
			8	2	2
			4	2	1
			3	2	1
			5	2	5
			4	3	3
			2	1	1
			3	2	3
			9	3	6
			3	2	1
			1	1	1
			3	2	1
			2	2	1
			2	1	1
			1	1	1
			3	2	2
			5	3	2
			2	2	1
			2	1	2
			3	3	3
Total		21			51
36	19	9	4	3	3
	13	9	3	2	1
	4	3	2	2	1
	12	7	5	4	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	10	8	6	4	4
	4	4	1	1	1
	5	2	2	1	1
	6	5	4	3	9
	9	4	3	2	1
	7	5	3	2	1
	11	5	1	1	1
	7	5	3	2	1
	28	4	1	1	1
	5	4	4	2	3
	4	4	2	1	1
			1	1	1
			2	2	1
			3	2	1
			4	3	6
			2	1	1
			8	4	5
			1	1	1
			2	1	1
			2	1	1
			3	3	1
			2	1	1
			1	1	1
			4	3	1
			2	1	1
			2	2	2
			1	1	1
			4	3	2
			2	2	1
			2	1	1
			3	1	1
			4	4	6
			5	3	2
			1	1	1

PENETRATIONS SHELLS IN PANELS

LOT NUMBER

DATE 4 June 53

FIRING RANGE NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Sheet 29 of 34

Soviet

Round No. 17

IN PANELS WITH RADIUS OF 60' AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			4	3	6
			2	1	3
			3	2	2
			3	2	3
			3	2	2
			3	2	1
			5	2	4
			4	2	2
			2	1	1
Total		15			47
37	5	3	4	3	4
	15	9	5	4	3
	5	5	6	5	6
			2	1	1
			5	3	7
			8	5	6
			3	3	2
			2	1	1
			2	2	1
			9	5	6
Total		3			10
38	13	5	10	8	5
	5	4	5	4	2
	5	6	2	1	1
			2	2	1
			5	3	2
			5	3	6
			3	3	3
			4	3	1
			4	4	2
			5	3	2
			3	2	2
Total			2		13

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			3	3	6
Total		3			12
39	6	4	8	6	2
	7	5	2	1	1
	13	4	4	3	2
			2	1	1
			2	1	1
			8	3	2
			5	4	3
			4	3	3
			2	1	1
Total		3			9
40	10	5	1	1	1
	12	4	6	4	2
			4	4	3
			3	2	2
Total		2			4
41	10	5	2	2	1
	15	5	1	1	1
			1	1	1
			4	2	1
			3	2	1
			8	5	2
			2	1	1
			5	4	2
			3	3	2
			3	3	2
			4	4	4
			3	2	1
			3	2	1
Total		2			13



ORD 88-737 18 FEB 48  
FORMERLY SPOTZ-F-281

# PENETRATIONS OF SHELLS IN PANELS

LOT NUM

DATE 4 June 53

FIRING RECORD NUMBER

PRIORITY NUMBER

~~XXXXXXXX~~ Sheet 30 of 34

~~XXXXXXXX~~ Round No. 17

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, O-452A LOADED AT/90

Soviet

IN PANELS WITH RADIUS OF 60"

AND

FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
42	15	8	3	3	2
	10	5	3	3	2
			7	3	3
			3	2	1
Total		2			4
43			6	4	5
			1	1	1
			5	4	2
			1	1	1
Total					4
44			5	4	2
			3	4	2
Total					2
45			4	3	2
			1	1	1
			2	1	1
Total					3
46			6	4	3
			3	2	2
Total					2
47			5	3	2
Total					1
48			1	1	1
Total					1
49			4	3	2
Total					1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
50			3	2	2
			3	2	2
Total					2
51			1	1	1
Total					1
52	6	4	1	1	1
			1	1	1
			2	2	1
			2	2	1
			2	1	1
			1	1	1
Total		1			6
53			3	2	2
			3	3	2
			1	1	1
			2	1	1
			4	3	2
			2	2	2
			1	1	1
			3	2	2
			2	2	1
Total					9
54			2	1	1
			5	2	2
			3	1	1
			5	2	1
			2	1	1
			3	2	2
			2	2	1
Total					7

# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 4 June 53

FIRING NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Sheet 31 of 34  
Round No. 17

Soviet

60'

AND

FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
55			2	1	2
			1	1	1
			5	4	4
			2	3	2
			3	1	1
			1	1	1
			3	2	2
			3	2	2
			5	4	4
			5	4	5
			5	4	4
			2	2	2
Total					12
56			3	2	3
			4	4	4
			1	1	1
			2	1	1
			2	2	1
			2	1	1
			1	1	1
			4	1	2
Total					8
57			4	3	2
			2	2	1
Total					2
58.1			3	3	2
			3	2	1
			3	2	1
Total					3

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
58.2			3	2	1
			2	2	1
			2	2	1
Total					3
58.3			3	1	1
Total					1
59.1	13	6	5	3	2
	6	4	3	2	2
			3	2	2
			6	3	3
			1	1	1
Total		2			5
59.2	12	4	2	1	1
			3	2	2
			8	3	3
			3	2	1
			5	3	2
			2	2	1
Total		1			6
59.3	12	12	2	2	2
			6	4	3
			3	3	2
			3	2	3
			1	1	1
Total		1			5
60.1	4	4	2	1	1
	8	4	4	3	3
			4	4	3
			1	1	1

ORD 80-727 10 FEB 48  
FORMERLY SPOT 2-F-281

# PENETRATIONS OF SHELLS IN PANELS

LOT NO.

DATE 4 June 53

FIRING RECORD NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A  
Soviet

LOADED AT/90

XXXXXX Round No. 17

XXXXXX Sheet 32 of 34

IN PANELS WITH RADII OF

60

AND

FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			1	1	1
			3	2	1
			3	2	3
			4	3	2
			5	3	2
			1	1	1
Total		2			11
60.2			6	4	4
			3	2	2
			2	2	2
			12	6	6
			7	4	7
			3	2	1
			5	3	3
			3	2	1
			1	1	2
			4	4	4
			5	2	2
Total					11
60.3			3	2	1
			10	3	3
			4	4	1
			1	1	1
			4	4	5
			6	3	3
			1	1	1
			3	2	1
			1	1	1
			1	1	1
			3	2	1
			6	4	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
Total					12
61.1	12	5	6	3	8
	11	6	3	2	1
	5	4	2	1	1
			3	2	2
			2	2	1
			7	4	4
			2	2	1
			3	2	2
			2	2	1
			3	2	5
Total		3			14
61.2	9	5	2	2	2
	5	5	3	2	1
	3	2	5	4	4
			1	1	1
			1	1	1
			4	2	2
			5	3	3
			7	4	3
			3	2	1
			1	1	1
			1	1	1
Total		3			11
61.3	8	5	4	4	3
			3	2	1
			3	1	1

ORDER 737 18 FEB 48  
FORMERLY SPOTZ-F-281

# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 4 June 55

FIRING NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90  
Soviet

Sheet 33 of 34

Round No. 17

IN PANELS WITH RADIUS OF 60' AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			4	3	3	62.3			3	3	1
			9	4	6				6	4	3
			4	3	2				8	5	7
			12	6	6				5	3	8
Total		1			7				2	1	1
62.1	5	7	4	2	2				7	3	3
			5	4	4				4	2	3
			3	2	2				1	1	1
			4	4	4	Total					8
			3	2	2	63.1			3	2	2
			5	3	2				2	2	1
			4	4	6				4	3	1
Total		1			7				3	2	2
62.2	6	6	2	2	1				6	4	5
			1	1	1				2	1	1
			2	2	1				2	2	2
			2	2	1				2	1	1
			3	2	1				4	4	4
			5	3	2				1	1	1
			5	2	2				4	1	1
			3	2	2				4	1	1
			1	1	1	Total					12
			2	2	2	63.2	6	4	3	2	1
			2	2	1		6	6	2	1	1
			2	1	1		5	4	5	4	4
			2	1	1				3	2	2
			2	1	1				10	3	8
			4	2	1				2	2	1
			3	3	2				1	1	1
			5	4	3				2	2	2
Total		1			17				6	2	1
									3	3	1

## PENETRATION OF SHELLS IN PANELS

LOT NUMB

FIRING NUMBER

PRIORITY NUMBER

DATE 4 June 55

PENETRATIONS OF SHELL 122mm, O-462A      LOADED AT/90

Sheet 34 of 34

~~XXXXXXXXXX~~ Round No. 17

ROCKET NUMBER

Soviet

60.

AND

FEET

[illegible][illegible]

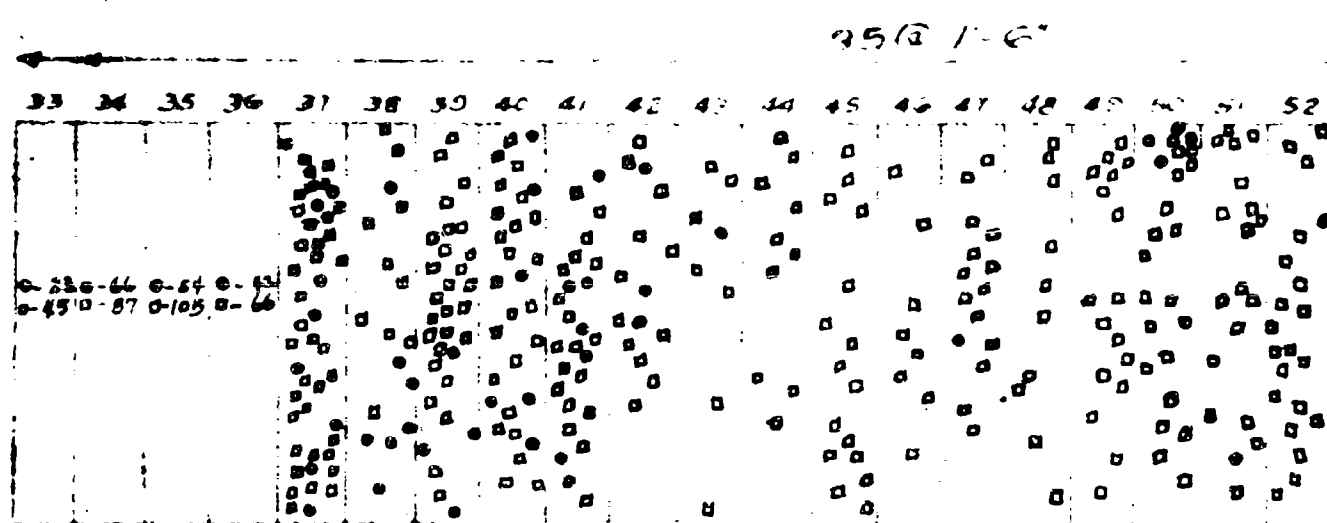
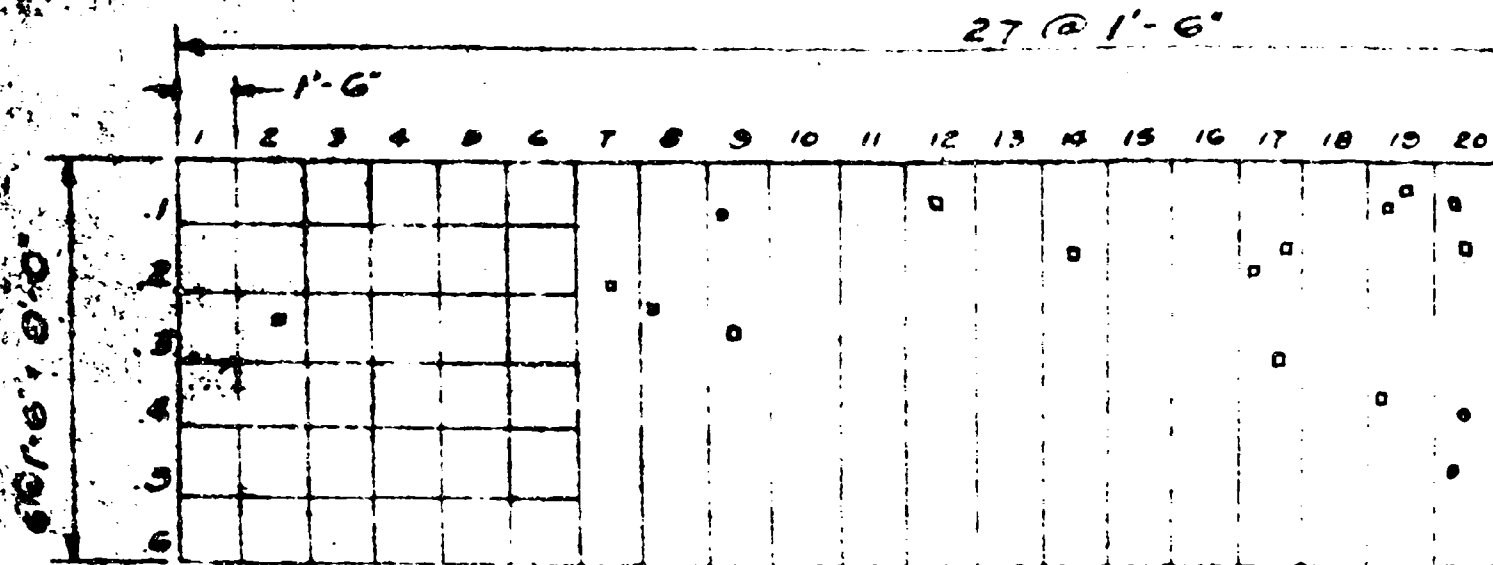
B-11822

1

CONFIDENTIAL

PANEL A

30 FT RADIUS 180° AREA



1" NO. 3 PINE BOARDS (DRESSED) PLACED VERT

DATE: 6/4/53 RD. NO. 17

PERFORATIONS: 387

SHELL: 12MM, SOVIET

PENETRATIONS: 1404

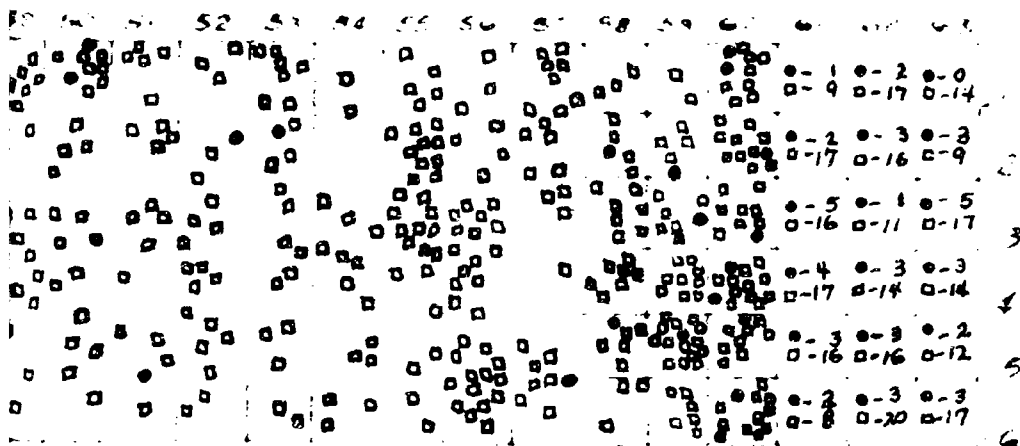
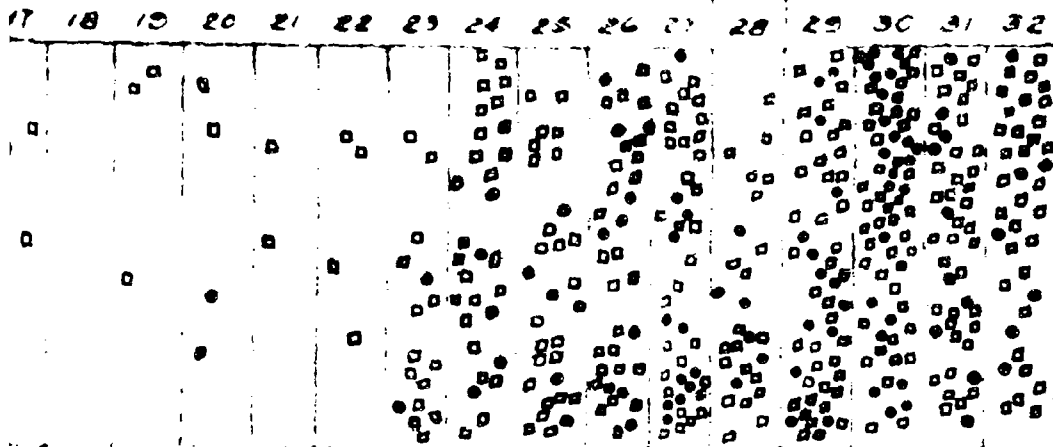
POSITION OF SHELL: HORIZONTAL

CONFIDENTIAL

7

180° ARC

15"



2

LED VERTICALLY

387

1404

RANGE CREATIONS SECTION

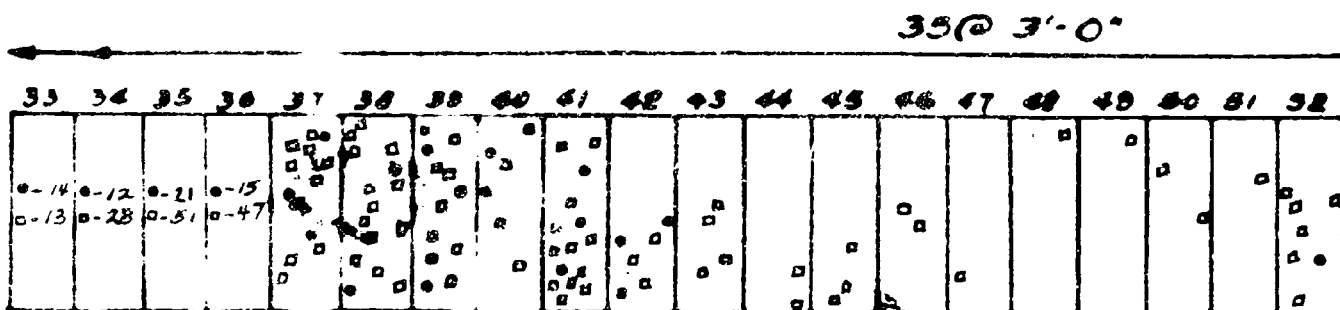
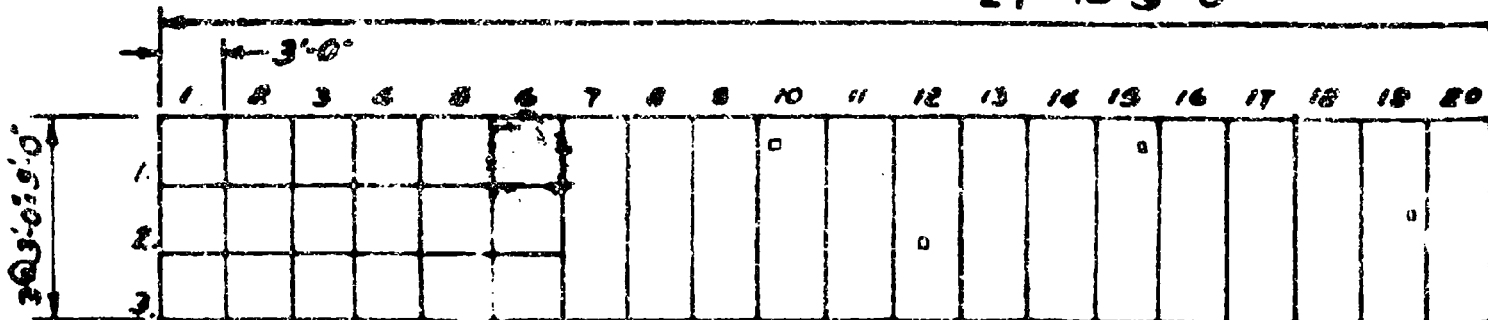
LAYOUT OF PANELS  
FOR  
NUMBER AND DISTRIBUTION  
OF FRAGMENTS  
(30 FT RADIUS)

ABERDEEN PROVING GROUND MD  
OCT 27 1944

PRG 11876-15

148A

**CONFIDENTIAL PANEL B**  
 60 FT. RADIUS 180° ARC  
 27 @ 3'-0"



1" NO. 3 PINE BOARDS (DRESSED) PLACED VER

DATE: JUNE 4 / 53 RD. NO. 17

PERFORATIONS: 130

SHELL: 122 MM, SOVIET

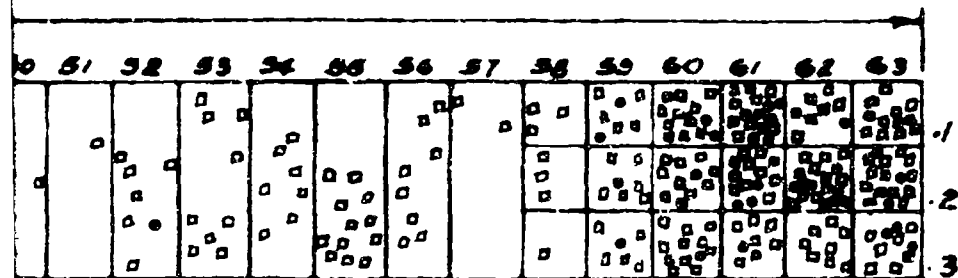
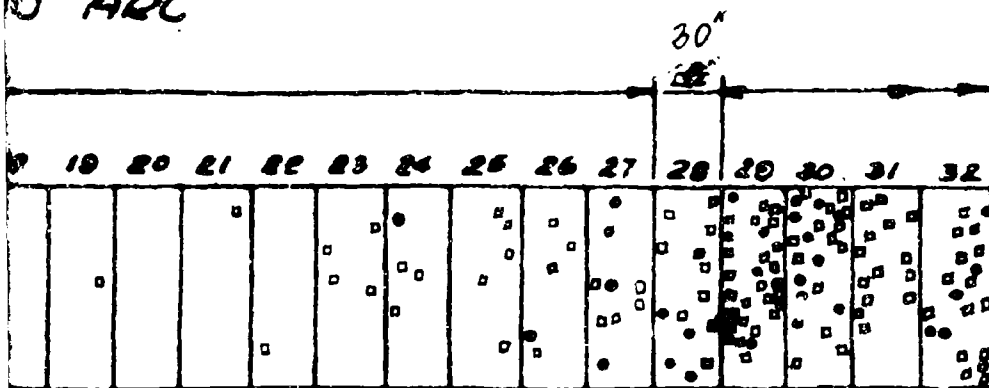
PENETRATIONS: 509

POSITION OF SHELL: HORIZONTAL

**CONFIDENTIAL**



10° ARC



D VERTICALLY.

130

509

## RANGE OPERATIONS SECTION

LAYOUT OF PANELS  
FOR  
NUMBER AND DISTRIBUTION  
OF FRAGMENTS  
(60 FT. RADIUS)

ABERDEEN PROVING ~~GROUND~~ ~~MO~~  
OCT. 27, 1944 ARG 11876-14 PR

14/8/43

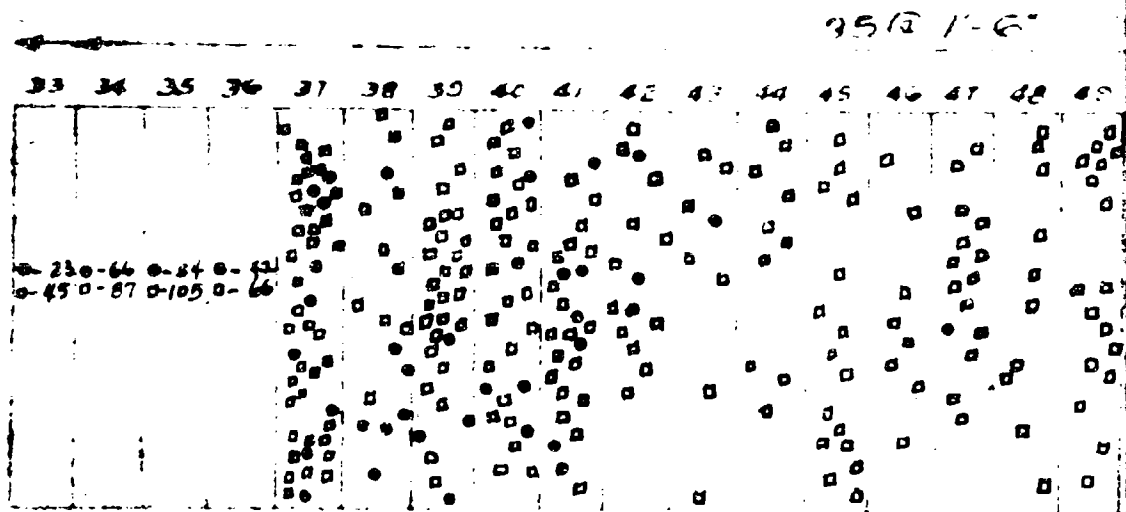
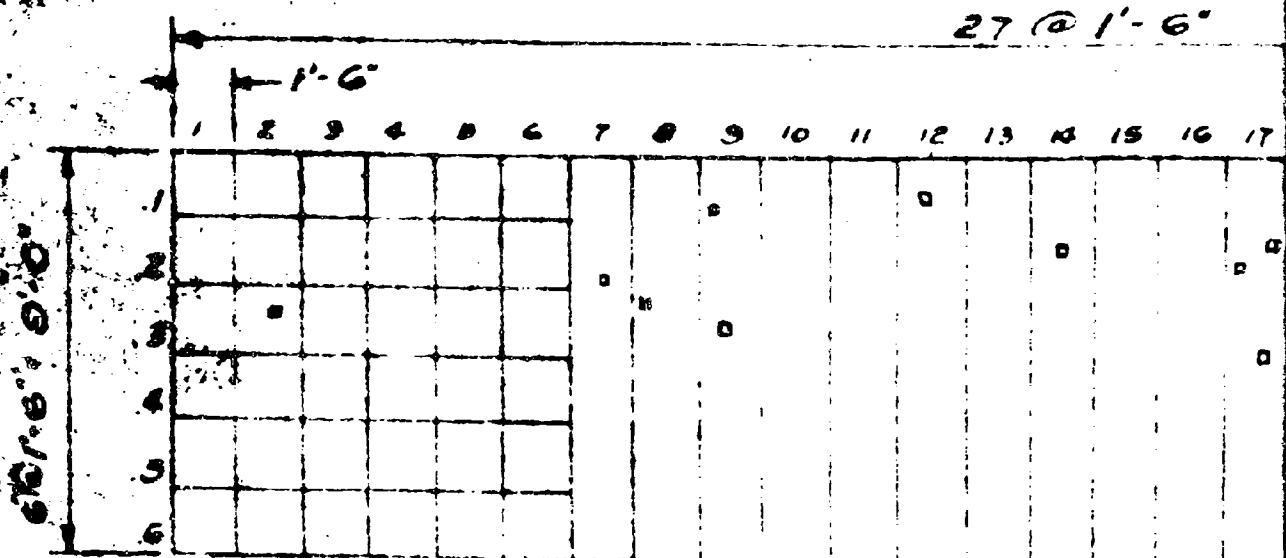
B-11822

1

CONFIDENTIAL

PANEL A

30 FT RADIUS



1" NO. 3 PINE BOARDS (DRESSED) PLACED

DATE: 6/4/53 RD. NO. 17

PERFORATIONS: 0

SHELL: 122MM, SOVIET

PENETRATIONS: 0

POSITION OF SHELL: HORIZONTAL

CONFIDENTIAL

L A

DIUS 180° ARC

1-6"

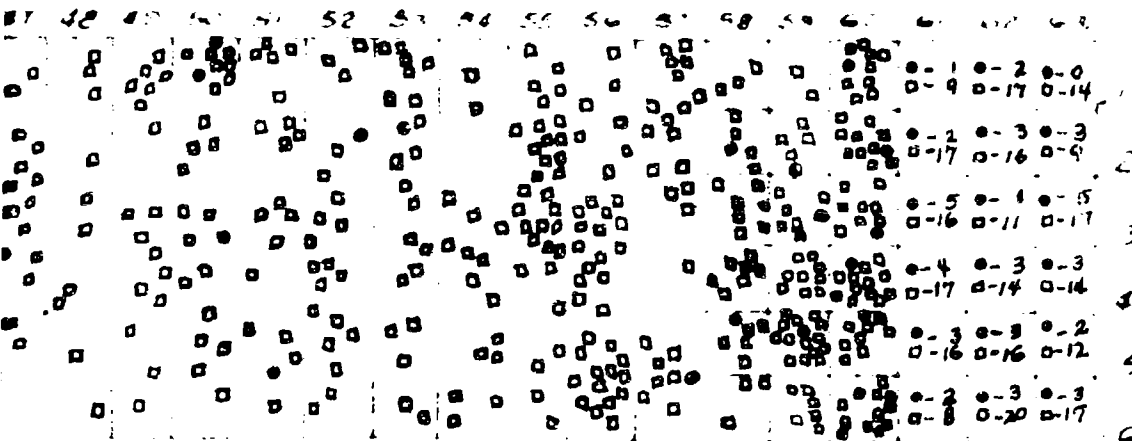
15"

15"

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32



1-6"



PLACED VERTICALLY

DINS: 387

DINS: 1404

TIAL

RANGE CREATIONS SECTION

LAYOUT OF RANGE'S  
FORNUMBER AND DISTRIBUTION  
OF FRAGMENTS  
(30 FT RADIUS)

ABERDEEN PROVING GROUND MD

148P

180° ARC

15"

3

18 19 20 21 22 23 24 25 26 27 28 29 30 31 32



ED VERTICALLY

387

1404

RANGE OPERATIONS SECTION

CUT OF FRAGMENTS  
FOR

NUMBER AND DISTRIBUTION  
OF FRAGMENTS  
(30 FT RADIUS)

148A

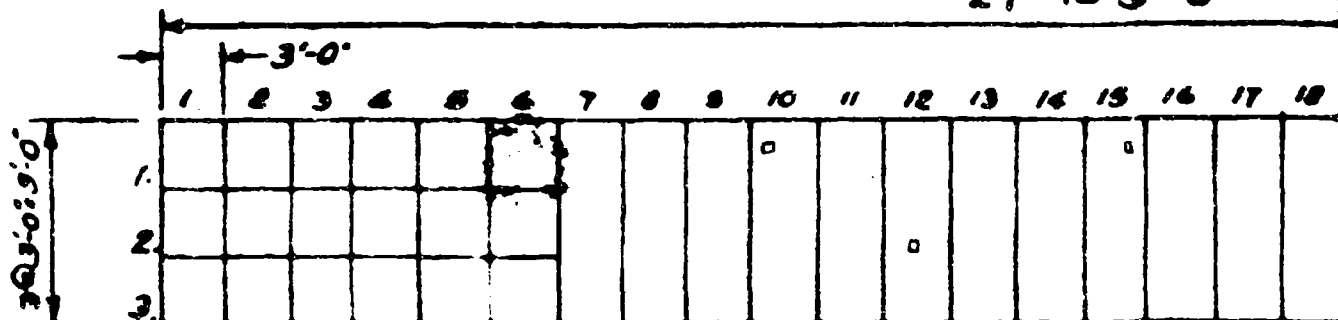
ABERDEEN PROVING GROUND MD  
OCT 27 1944 RRG 11876-15

3-11822

I

# CONFIDENTIAL PANEL B

60 FT. RADIUS 180  
27 @ 3'-0"



1" NO. 3 PINE BOARDS (DRESSED) PLACED

DATE: JUNE 4 / 53 RD. NO. 17

PERFORATIONS: 0

SHELL: 122MM, SOVIET

PENETRATIONS: 0

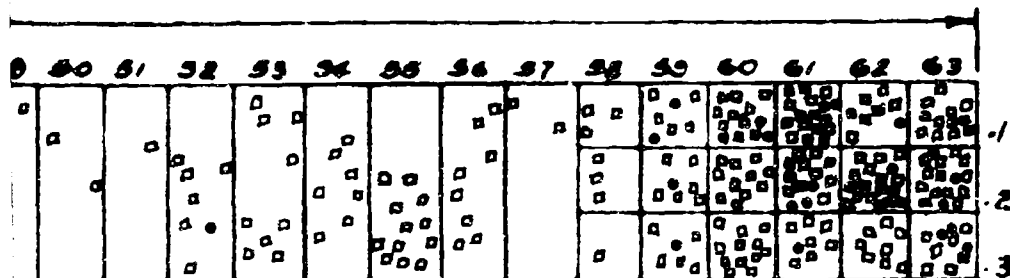
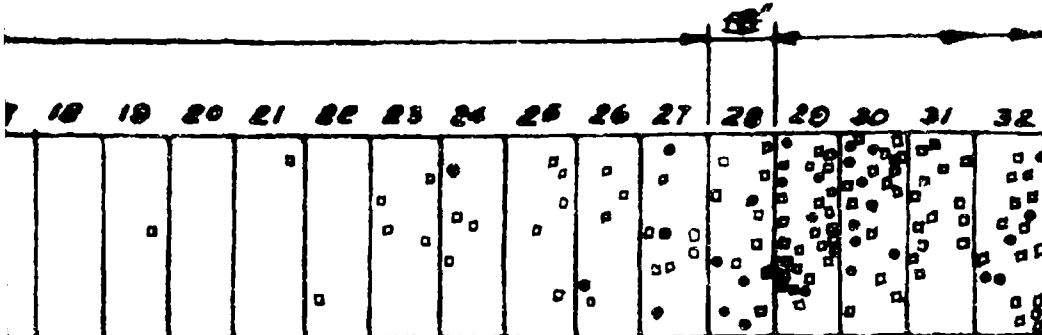
POSITION OF SHELL: HORIZONTAL

CONFIDENTIAL

2

180° ARC

30"



CED VERTICALLY.

## RANGE OPERATIONS SECTION

LAYOUT OF PANELS  
FOR  
NUMBER AND DISTRIBUTION  
OF FRAGMENTS  
(60 FT. RADIUS)

ABERDEEN PROVING GROUND, MD  
OCT. 27, 1944  
APG 11876-14 PR

D. 130

D. 509

14/813

FIRING RECORD NO. D-11822  
INCLOSURE 3

31 July 1953

ROUND NO. 20

SHELL, NO. 1000, Serial  
M101, C-400, Ammonium Nitrate 90% - TNT 10%

SHELL FRAGMENTS

FRAGMENTS

515  
4-45  
122

REVERSE

(none)

BASE

Marked Rough

Shell has one split rotating band.

Weight of Shell w/o Fragment - 46.18 lbs.  
As fired - 46.25 lbs.

Distance from Shell to the center of the C.380' duralumin flash target - 22.67 ft.

Shell before firing is shown in APB Photograph No. A73156.

Recovered fragments with their respective weights and velocities are shown in  
APB Photograph No. A73157.

B-11822

# **CONFIDENTIAL** FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet, AT/90 Side Recovery Box Data

Proof Director Mr. C. L. Rogers Date Fired 31 July 1953

Distance from detonation point to target 22.71 feet. Round No. 20

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
1	18	2656	17	42	2604	33	N.R.	
2	4		18	3		34	N.R.	
3	3	2304	19	1		35	132	2042
4	12		20	4	2642	36	75	2567
5	5		21	N.R.	2567	37	5	2428
6	3		22	25		38	4	
7	35	2496	23	N.R.		39	N.R.	
8	26		24	6	2531	40	N.R.	
9	2		25	36	2496	41	N.R.	2567
10	17	2695	26	N.R.		42	N.R.	
11	2		27	46	2531	43	14	
12	N.R.		28	30(2)	2604	44	13	
13	N.R.		29	10	2462	45	1(2)	
14	3		30	4		46	N.R.	2604
15	5		31	4		47	110(2)	2604
16	7		32	11		48	1	

Average velocity 2376 ft/sec.

NV - no velocity recorded.

NR - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than  $\pm$  3.5 % for the highest velocity and  $\pm$  2.8 % for the lowest velocity.

Shot 20 of 20

**CONFIDENTIAL** 15



**CONFIDENTIAL**

# FRAGMENT VELOCITY DATA

B-11722

Test of Shell, HE, 122mm, Soviet

Side Recovery Box Data

Proof Director Mr. O. L. Rogers

Date Fired 31 July 1953

Distance from detonation point to target 22.71 feet. Pound No. 20

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
49	N.R.		65	2		81	3	
50	50		66	14	2462	82	N.R.	2139
51	10		67	N.R.		83	19	1510
52	N.R.		68	N.R.		84	4	2428
53	7		69	2	2364	85	6	
54	69		70	13		86	5	
55	1		71	N.R.		87	6	2428
56	11	2531	72	163(3)	2567	88	8	
57	99(4)		73	N.R.		89	2	
58	2(3)		74	20		90	12	2531
59	11		75	19(2)	2604	91	N.R.	2567
60	3		76	10		92	8	2604
61	N.R.		77	N.R.		93	9	
62	N.R.	2396	78	1	2364	94	N.R.	
63	N.R.	2642	79	N.R.	2428	95	N.R.	
64	42(2)	2604	80	N.R.		96	5	

Average velocity 2376 ft/sec.

NV - no velocity recorded.

NR - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than  $\pm$  3.5 % for the highest velocity and  $\pm$  2.8 % for the lowest velocity. 2 7

Sheet 21 of 26

**CONFIDENTIAL**

**CONFIDENTIAL**

# FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet Side Recovery Box Data

Proof Director Mr. O. L. Rogers Date Fired 31 July 1953

Distance from detonation point to target 22.71 feet. Round No. 20

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
97	N.R.	1834	113	N.R.	2462	129	N.R.	2364
98	48(4)	2531	114	67		130	67(2)	2396
99	3		115	16		131	N.R.	
100	19	2019	116	N.R.	2496	132	24	
101	14		117	8	2334	133	158	
102	19		118	N.R.		134	15	
103	N.R.		119	37(3)	2496	135	5	2428
104	9		120	67(5)		136	42(9)	
105	N.R.		121	2	2496	137	19(4)	
106	N.R.		122	1		138	58	
107	12		123	N.R.	2462	139	29	
108	N.R.		124	95		140	8	
109	78(4)	1932	125	27(5)	2139	141	3	1975
110	6(3)	1695	126	N.R.		142	N.R.	
111	12(7)		127	11		143	16	2531
112	14		128	1		144	46(2)	2066

Average velocity 2376 ft/sec.

NV - no velocity recorded.

NR - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than + 3.5 % for the highest velocity and + 2.8 % for the lowest velocity.

Sheet 3 of 7

B-11822

~~CONFIDENTIAL~~

# FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet Side Recovery Box Data

Proof Director Mr. C. L. Rogers Date Fired 31 July 1953

Distance from detonation point to target 22.71 feet. I and No. 20

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
145	9		161	3		177	12	
146	9		162	200(2)	1695	178	7(4)	
147	N.R.		163	20	2364	179	1	
148	99(3)		164	271		180	3	
149	3		165	N.R.	2218	181	N.R.	
150	40		166	14		182	N.R.	
151	19	2304	167	11(2)		183	N.R.	
152	1		168	3		184	3(5)	
153	106(3)		169	N.R.		185	21	
154	2		170	N.R.		186	6	
155	0+		171	79		187	N.R.	
156	12		172	98(7)		188	51	
157	15		173	8		189	141	
158	2		174	81(2)		190	4	
159	110(5)	2398	175	26		191	34	
160	N.R.		176	59		192	45	

Average velocity 2376 ft/sec.

NV - no velocity recorded.

NH - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than  $\pm$  3.5 % for the highest velocity and  $\pm$  2.8 % for the lowest velocity.

Sheet 4 of 7

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# FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet Side Recovery Box Data

Proof Director Mr. O. L. Rogers Date Fired 31 July 1953

Distance from detonation point to target 22.71 feet. Round No. 20

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
193	12		209	N.R.	2156	225	17	
194	N.R.		210	N.R.		226	15	
195	7		211	N.R.		227	22	
196	7		212	6		228	16	
197	N.R.		213	N.R.		229	7(7)	
198	40		214	N.R.		230	27	
199	N.R.		215	2C	2156	231	N.R.	
200	137		216	17		232	32	
201	51		217	N.R.		233	3	
202	23(4)		218	46(2)		234	8	
203	50		219	27		235	39	
204	48		220	N.R.		236	37	
205	N.R.	2510	221	15		237	N.R.	
206	N.R.		222	N.R.		238	12(2)	
207	N.R.		223	20(2)		239	5	
208	1	2083	224	4		240	N.R.	

Average velocity 2376 ft/sec.

NV - no velocity recorded.

NR - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than + 3.5 % for the highest velocity and + 2.8 % for the lowest velocity.

Sheet 24 of 26

B-11822

**CONFIDENTIAL** **FRAGMENT VELOCITY DATA**

Test of Shell, HE, 122-mm, Soviet Side Recovery Box Data

Proof Directory Mr. O. L. Rogers Date Fired 31 July 1953

Distance from detonation point to target 22.71 feet. Round No. 20

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
241	63(2)		257	N.R.		273	2(3)	2496
242	75(2)		258	12		274	1	
243	8		259	14		275	15	
244	5		260	61(2)		276	21(2)	
245	24		261	N.R.		277	8	2604
246	53		262	31		278	74	2567
247	N.R.		263	2	2531	279	44	
248	146(4)		264	N.R.		280	0+	
249	37(7)		265	43		281	22(2)	
250	37(5)		266	7		282	18	
251	14		267	N.R.		283	10	2604
252	47(2)		268	3		284	N.R.	2567
253	23		269	N.R.	2246	285	N.R.	2604
254	94		270	0+		286	17	2462
255	12		271	53		287	N.R.	
256	22	1997	272	2	1912	288	0+	

Average velocity 2376 ft/sec.

NV - no velocity recorded.

NR - not recovered.

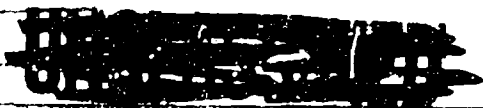
(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than + 3.5 % for the highest velocity and + 2.8 % for the lowest velocity.

Sheet 6 of 7

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B-11822

# FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet Side Recovery Box Data

Proof Director Mr. O. L. Rogers Date Fired 31 July 1953

Distance from detonation point to target 22.71 feet. Round No. 20

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
289	4(2)		305	N.R.				
290	4		306	N.R.				
291	3		307	2				
292	13		308	3	2208			
293	8		309	2				
294	N.R.		310	3				
295	N.R.		311	N.R.	2208			
296	11	2396						
297	2							
298	N.R.							
299	36	2656						
300	11							
301	23							
302	12	2510						
303	3	2131						
304	N.R.	2262						

Average velocity 2376 ft/sec.

NY - no velocity recorded.

NR - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracy less than + 3.5 % for the highest velocity and + 2.8 % for the lowest velocity.

Sheet 7

SECRET

~~SECRET~~

153

PENETRATION OF SHELLS IN PANELS

LOT NUMBER

FIRING NUMBER

PRIORITY NUMBER

DATE: 10 July 53

PENETRATIONS OF SHELL 122mm-4024 Soviet MADE 12/50

Sheet 1 of 48

Round No. 20

IN PANELS WITH RADII OF 30' AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
2.3			1	1	1
			1	1	1
Total					2
3.5			1	1	1
Total					1
5.2			2	2	2
Total					1
6.4			1	1	1
Total					1
7			3	1	1
Total					1
8			2	2	1
Total					1
10			2	2	1
Total					1
11	3	2	2	1	1
Total		1			1
15			1	1	1
			1	1	1
Total					2
16			3	1	6
Total					1
17			2	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
Total					1
18	8	4	2	1	1
			1	1	2
			1	1	1
			2	2	2
			3	2	4
Total		1			5
19			1	1	1
			1	1	1
			1	1	1
			1	1	1
			2	1	2
Total					5
20	10	10	2	1	2
			2	1	3
			1	1	3
Total		1			3
21			3	2	3
Total					1
22			1	1	1
			1	1	1
			2	1	1
			1	1	1
			4	2	4
Total					5
23			2	2	2
			1	1	2
			1	1	1

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GROUP 757 10 FEB 48  
FORMERLY SPOT-F-201

# PENETRATION OF SHELLS IN PANELS

LOT NUMBER

DATE 31 JUL 68

FIRING NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, Q-462A LOADED AT/60

~~SECRET~~ Sheet 2 of 46

~~SECRET~~ Round No. 20

IN PANELS WITH <sup>Soviet</sup> 30' AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
23 Cont			1	1	1
			2	1	2
			2	1	2
			1	1	1
			2	1	2
			1	1	1
			3	2	2
Total					10
24			1	1	1
			4	3	2
			2	1	1
			2	1	2
			2	1	1
			1	1	1
			2	1	1
			1	1	2
			1	1	1
			2	1	2
			2	1	2
			1	1	1
			1	1	1
			1	1	1
			4	3	2
			1	1	2
			1	1	1
			2	1	2
			2	1	1
			1	1	1
			2	1	2
			2	1	3
Total					23

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
25	8	7	1	1	1
	15	6	1	1	2
	4	2	1	1	2
	3	2	3	2	3
	4	3	2	1	1
			1	1	1
			5	2	4
			2	1	2
			4	3	4
			2	1	1
			4	3	4
			2	1	2
			2	1	2
			4	3	6
			6	4	3
			4	2	4
			3	2	4
			2	1	2
			1	1	1
			5	3	4
			2	1	2
			5	3	4
			3	2	7
			5	2	6
			3	1	1
			1	1	2
			1	1	1
			2	1	2
			1	1	1
			1	1	1
			3	2	5
			1	1	1
			6	3	9
			3	2	3



B-1122

GRCB-737 10 PCB 48 FORMERLY SPOTZ-F-201	<b>PENETRATION OF SHELLS IN PANELS</b>	LOT NUMBER FIRING NO NUMBER PRIORITY NUMBER	DATE 31 JUL 50
PENETRATIONS OF SHELL 122mm, C-432A LOADED AT/50		SHEET 3 of 46 ROUND No. 20	
Soviet IN PANELS WITH RADIUS OF 30' AND FEET		POCKET NUMBER	

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
25 Cont			1	1	1
			3	2	4
			2	2	5
			2	1	1
			1	1	2
			2	2	5
Total		5			40
26	4	3	1	1	1
	4	3	1	1	1
	2	2	2	1	2
	9	6	1	1	1
	5	3	3	2	7
	3	2	3	2	2
	3	2	1	1	2
	5	4	2	2	4
	7	4	1	1	1
	3	2	1	1	1
	3	3	1	1	2
			1	1	1
			1	1	1
			2	1	4
			2	1	2
			3	2	7
			1	1	1
			2	1	3
			2	2	3
			2	1	2
			1	1	1
			5	2	5
			1	1	1
			4	3	7
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			6	3	3
			1	1	1
			1	1	2
			6	3	6
			2	1	1
			1	1	2
			4	2	5
			3	2	3
			3	2	5
			2	1	2
			1	1	1
			2	1	1
			1	1	1
			1	1	1
			2	2	2
			1	1	1
			4	2	4
			2	1	1
			1	1	1
			2	2	2
			3	2	4
			3	2	8
Total		11			48
27	4	3	4	3	4
	18	9	2	2	2
	4	3	1	1	1
	5	4	1	1	1
	9	4	3	2	2
	4	2	2	2	2
	4	4	2	2	2
	5	4	2	2	3
	4	2	4	3	15
	5	3	3	2	3

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ORDNO-737 18 FEB 48  
FORMERLY SPOT-F-201

# PENETRATIONS SHELLS IN PANELS

LOT NUMBER

DATE 31 July 58

FIRING NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-432A LOADED AT/90

Sheet 4 of 46

Soviet

Round No. 20

IN PANELS WITH RADIUS OF 30'

AND

FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
27 Cont	4	3	2	1	2
	3	4			
			1	1	1
			3	2	7
			3	3	2
			2	2	2
			4	2	1
			2	1	3
			2	2	4
			1	1	1
			3	2	3
			3	2	5
			1	1	1
			2	2	2
			3	2	5
			3	2	1
			1	1	2
			1	1	3
			1	1	1
			3	2	4
			1	1	1
			9	3	2
			1	1	2
			4	2	4
			6	2	6
			2	2	3
			2	2	2
			4	2	4
			3	3	2
			1	1	2
			1	1	1
			1	1	1
			3	2	4
			3	1	2
			4	2	3

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	2
			1	3	2
Total		12			46
28	7	3	3	3	2
	10	4	2	1	2
	4	4	1	1	1
	4	2	2	1	1
	8	5	2	2	2
	5	2	4	3	6
	5	3	2	2	3
	3	3	1	1	1
			2	2	7
			2	2	2
			2	2	2
			2	2	2
			2	1	3
			1	1	1
			1	1	1
			3	3	4
			2	2	7
			2	2	4
			3	2	4
			1	1	1
			1	1	1
Total		8			21
29	3	5	1	1	2
	5	3	1	1	1
	5	3	1	1	3
	4	4	1	1	2
	8	4	1	1	1
	4	4	1	1	1
	5	2	2	2	2

ORDG 737 10 FEB 48  
FORMERLY SPOTZ-F-201

# PENETRATIONS SHELLS IN PANELS

LOT NUMBER

FIRING POSITION NUMBER

PRIORITY NUMBER

DATE 31 July 50

PENETRATIONS OF SHELL 122mm, O-432A Soviet 17/90

Sheet 5 of 46

Round No. 20

IN PANELS WITH RADII OF 50' AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	3	2	4	2	4				3	2	2
	5	5	1	1	1				1	1	1
	4	2	2	2	3				3	3	6
	4	3	1	1	1				3	3	6
	5	5	2	2	2				2	2	5
	8	4	1	1	2				3	2	6
	4	3	1	1	3	Total		14			47
			3	3	2						
			2	2	3	30	6	4	3	2	2
			1	1	2		7	5	2	2	3
			1	1	1		5	4	4	2	6
			3	2	4		7	4	4	2	4
			1	1	2		2	3	3	2	4
			1	1	1		2	4	2	2	2
			1	1	1		3	3	1	1	1
			4	4	5		4	3	2	1	1
			1	1	1		3	4	3	1	2
			4	2	3		3	4	2	2	2
			1	1	1		5	4	3	3	6
			3	3	3		5	2	3	2	1
			1	1	1		3	3	1	1	1
			3	2	3		7	5	2	2	2
			2	1	1		6	4	3	2	6
			2	2	2		4	3	1	1	1
			4	3	5		7	6	1	1	7
			2	1	1		4	4	2	2	2
			2	2	4		3	2	2	2	2
			1	1	1		4	4	1	1	1
			2	2	2		12	3	1	1	1
			4	2	3		3	3	1	1	1
			4	3	6		4	2	1	1	1
			1	1	1		9	3	4	2	7
			2	1	1		5	3	3	1	1
			3	4			10	4	3	3	6

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ORDBG-737 10 FEB 48  
FORMERLY SPOTZ-P-201

# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 31 July 53

FIRING RANGE NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-482A Soviet AT/30

NAVY FORM Sheet 6 of 46

IN PANELS WITH RADIUS OF 30' AND ... FEET

ROCKET NUMBER

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
30 Cont	4	3	4	2	1	30 Cont			6	2	7
	5	3	3	1	1				2	2	2
	4	3	6	4	3				3	2	1
	4	3	1	1	1				2	2	2
	5	4	2	2	2				1	1	1
	8	4	2	2	2				1	1	1
	8	5	2	2	3				3	2	1
	7	5	3	2	2	Total		38			67
	4	3	4	2	2						
	8	7	1	1	1	31	6	4	4	3	7
	7	4	1	1	1		4	3	1	1	1
	8	6	1	1	1		7	4	1	1	1
			1	1	1		6	5	2	2	2
			4	2	3		5	4	1	1	1
			4	2	9		7	5	1	1	1
			1	1	1		6	7	3	2	5
			3	2	1		5	3	1	1	1
			2	2	2				2	2	2
			2	2	2				3	4	1
			3	1	1				1	1	1
			3	3	3				1	1	1
			2	2	2				1	1	1
			4	3	2				3	2	4
			4	2	3				3	2	1
			2	2	2				6	4	3
			1	1	1				2	2	2
			2	2	2				4	2	4
			2	2	2				3	2	2
			5	3	8				1	1	1
			3	3	2				2	2	2
			3	2	1				1	1	1
			3	3	6				1	1	1
			1	1	1				4	2	6
			1	1	1				2	2	2

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EX-100 787 10 PER 40  
PENETRATIONS OF SHELLS IN PANELS

# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 31 July 61

FIRING ROOM NUMBER

PRIORITY NUMBER

307XN9000X Sheet 7 of 48

NEEDLE NO. 20

SOCKET NUMBER

PENETRATIONS OF SHELL 22mm, G-402A Semi-AP

AT/90

PANEL WITH RADII OF 30"

FEET

PANEL NUMBER	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
11 Cont			1	1	1
			2	1	3
			1	1	1
Total		8			29
12	6	4	3	2	1
	7	5	3	1	1
	9	5	4	2	1
	3	3	1	1	1
	5	4	3	2	1
	9	2	5	3	7
	6	4	2	2	2
	7	4	4	3	9
	8	3	5	4	7
	5	4	5	4	6
	11	2	1	1	1
			1	1	1
			1	1	1
			1	1	1
			1	1	1
			3	1	1
			1	1	1
			1	1	1
			4	3	2
			6	3	5
			1	1	1
			3	3	6
			3	2	4
			4	2	5
			3	2	3
			1	1	1
			1	1	1
			3	2	2
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
Total		11			29
33	4	3	4	3	4
	6	3	3	2	4
	4	2	4	3	7
	7	3	4	3	6
	7	4	1	1	1
	8	7	4	3	6
	7	3	6	2	5
	8	3	1	1	1
	4	3	1	1	1
	11	5	2	2	2
	5	4	3	2	1
	7	4	3	1	1
	15	12	1	1	1
	3	7	3	2	1
	8	4	3	2	1
	7	3	2	2	5
	6	3	1	1	1
	12	5	1	1	1
	5	4	1	1	1
	10	7	1	1	1
	4	3	4	2	1
	4	3	4	3	2
	2	2	6	2	2
	7	4	3	3	4
-	7	4	2	2	2
	7	5	1	1	1
	8	4	2	2	7
	6	5	5	3	6
	14	5	2	2	3
			1	1	1
			1	1	1
			4	3	2

OPRSG 737 1P FEB 48  
FORMERLY SPOT-7-261

# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

FIRING POSITION NUMBER

PRIORITY NUMBER

DATE 12-1-50

PENETRATIONS OF SHELL 122mm, C-162A LOADED AT/30

IN PANELS WITH RADIUS OF 10' AND

AND

FEET

ROCKET NUMBER

Sheet 3 of 40

Round No. 20

PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
53 COM			3	2	1
			2	2	2
			2	2	2
			2	2	2
			1	1	1
			4	2	3
			3	1	5
			2	2	2
			1	1	1
			4	4	5
			2	2	3
			2	2	2
			5	1	1
			1	1	1
			5	3	3
			1	1	1
			1	1	1
			5	2	7
			3	2	5
			2	2	2
			2	2	2
			2	2	2
			2	1	1
			3	2	1
	29				53
54	4	4	1	1	1
	30	7	3	3	5
	7	4	2	1	1
	10	7	1	1	1
	6	5	2	2	2
	4	4	1	1	1
	3	3	2	1	2
	7	5	2	2	3

PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
54 COM	12	4	3	2	4
	5	3	1	1	2
	9	3	1	1	3
	15	6	2	2	2
	5	4	1	1	1
	16	5	1	1	1
	3	3	5	4	4
	4	3	1	1	2
	4	4	1	1	1
	7	5	2	1	2
	7	4	3	3	1
	9	4	1	1	2
	5	4	3	3	12
	20	11	1	1	2
	9	7	4	3	3
	16	6	4	3	4
	6	5	1	1	1
	9	4	1	1	2
	7	4	2	2	2
	3	3	2	1	4
	9	6	3	3	5
	2	3	1	1	1
	4	5	1	1	1
	5	4	3	3	5
	10	4	1	1	1
	5	5	1	1	1
	10	6	3	2	7
	13	6	5	5	4
	11	6	3	2	5
	7	4	1	1	1
	9	5	2	2	4
	6	4	2	1	1
	3	3	3	2	14
	11	8	4	3	5

CONFIDENTIAL

# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

FIRING NUMBER

PRIORITY NUMBER

DATE 31 July 6

PENETRATIONS OF SHELL 122mm, C-452A LOADED AT/00

Sheet 9 of 46

Round No. 20

IN PANELS WITH PART OF 501 AND FLET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
34 Cont	10	3	3	2	6
	6	4	1	1	2
	5	4	3	2	5
	7	4	1	1	1
	7	7	1	1	1
	5	4	1	1	1
	7	4	1	1	2
	5	4	1	1	2
	14	3	3	2	5
	6	4	1	1	1
	4	3	3	1	3
	9	5	3	1	1
	7	4	1	1	1
	5	4	5	3	5
	5	4	2	2	3
	5	4	2	1	1
	11	7	1	1	1
	4	3	1	1	2
	3	3	3	2	4
	7	5	1	1	1
	3	5	1	1	2
			1	1	1
			1	1	1
			2	1	1
			1	1	1
			1	1	1
			2	1	1
			3	2	4
			1	1	1
			2	1	1
			1	1	1
			2	2	10
			2	1	1
			1	1	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
34 Cont			3	3	10
			3	2	6
			1	1	1
			5	3	3
			3	1	2
			1	1	1
			2	2	2
			2	1	2
			2	2	3
			5	3	5
			4	3	3
			4	3	3
			2	2	4
			1	1	1
			2	1	1
			1	1	1
			1	1	1
			2	2	3
			3	2	4
			1	1	1
			2	1	1
			3	2	2
			1	1	1
			2	2	3
Total		33			100
35	13	3	1	1	2
	6	4	2	2	2
	4	4	2	2	2
	12	5	1	1	1
	5	4	1	1	1
	17	7	2	2	2
	11	5	2	2	1
			3	3	3

CONFIDENTIAL

# PENETRATIONS SHELLS IN PANELS

PENETRATIONS SHELLS IN PANELS

SCHEMATIC

DATE 12/10

IN PANELS WITH PAGES OF

AND

FEET

RECEIVED 13 Oct 11 09 49

RECEIVED 10 Oct 10 30

RECEIVED 10 Oct 10 30

PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
35 Cont	3	3	3	2	4
	4	3	1	1	1
	7	4	2	1	1
	10	3	2	1	1
	14	7	3	2	2
	18	3	3	3	2
	12	11	1	1	1
	18	3	3	3	3
	14	3	3	2	4
	3	2	4	3	3
	14	3	1	1	1
	6	4	2	1	3
	13	3	2	1	1
	10	3	2	1	1
	17	5	3	4	7
	3	3	2	1	1
	11	3	1	1	1
	11	7	1	1	2
	14	3	1	1	1
	4	4	2	1	2
	3	4	1	1	2
	7	5	1	1	1
	3	3	2	2	2
	15	3	1	1	1
	7	4	1	1	1
	4	3	1	1	1
	4	2	3	3	3
	3	4	1	1	1
	10	3	3	2	3
	7	4	1	1	1
	9	3	1	1	1
	13	7	2	1	2
	12	4	3	3	8
	4	4	7	2	2

PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
35 Cont	3	3	2	2	3
	3	7	4	2	4
	8	5	3	2	3
	14	7	1	1	1
	10	10	2	2	2
	3	3	1	1	1
	15	3	1	1	2
	13	4	1	1	2
	3	4	1	1	1
	9	7	1	1	1
	10	3	3	3	4
	3	4	1	1	1
	3	4	2	1	2
	6	4	2	2	2
	4	3	1	1	1
	11	4	1	1	1
	18	3	3	3	3
	21	3	1	1	1
	11	3	4	2	3
	3	3	4	3	3
	4	3	2	2	2
	7	4	4	3	3
			1	1	2
			1	1	1
			2	2	2
			1	1	1
			1	1	1
			3	2	3
			2	1	1
			3	3	9
			9	3	3
			3	2	3
			2	1	1
			1	1	2

CONFIDENTIAL



PENETRATION SHELLS IN PANELS

PENETRATION OF SHELL 100-1-2-101 AREA 50 17/10  
Soviet  
IN PANELS WITH RADIUS 301 AND FEET

Sheet 11 of 43  
Round No. 20

PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
35 Cont			2	1	3
			5	4	7
			3	3	3
			4	2	4
			4	3	2
			3	2	5
			1	1	3
			1	1	3
			4	3	4
			3	2	5
			2	2	3
			1	1	2
			2	1	2
			2	1	1
			2	1	3
			4	3	5
			2	1	1
			1	1	1
			2	1	6
			2	1	4
			1	1	1
			1	1	2
			3	2	3
			1	1	1
			2	2	3
			1	1	1
			3	2	2
			1	1	1
			4	2	1
			1	1	1
			1	1	1
			3	3	5
			1	1	1
			1	1	1

PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
35 Cont			2	1	2
			3	2	3
			2	1	1
			2	1	5
			4	3	3
			3	3	3
			1	1	3
			3	3	3
			3	3	4
			2	3	3
			3	4	3
			6	2	5
			3	3	3
			2	1	2
			4	2	5
			1	1	1
			8	3	3
			1	1	1
			2	1	2
			7	3	4
			1	1	1
			2	1	1
			1	1	1
			3	3	4
			3	3	3
			1	1	1
			2	1	2
			2	1	3
			2	2	2
			1	1	1
			2	1	1
			2	2	1

CONFIDENTIAL

Total

24

160

# PENETRATION OF SHELLS IN PANELS

PENETRATION OF SHELLS IN PANELS 107-10-1000-1000-1000-1000

SHEET 12 OF 43

IN PANELS WITH AREA OF 500 AND FEET

ROUND NO. 20

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
36 Cont	8	5	3	2	2	36 Cont			1	1	1
	8	5	2	2	3				3	3	4
	3	4	2	2	1				2	2	2
	12	7	1	1	1				3	2	3
	8	5	4	3	3				5	5	2
	5	4	2	2	2				2	1	1
	6	2	2	2	2				2	2	3
	2	2	2	2	1				2	3	4
	11	3	3	2	1				2	2	3
	11	5	2	2	2				1	1	1
	12	4	1	1	1				2	2	2
	11	10	1	1	1				5	2	3
	10	4	2	2	2				1	1	1
	6	4	1	1	1				1	1	1
	10	6	2	3	4				1	1	1
	5	3	3	2	4				2	2	2
	3	4	1	1	1				1	1	2
	3	5	3	2	3				2	2	2
	13	2	3	2	3				1	1	1
	9	4	1	1	2				1	1	1
	9	5	3	2	3				5	5	3
	3	3	1	1	2				1	1	1
	13	9	1	1	1				2	1	3
	5	3	5	4	3				1	1	1
	5	4	1	1	1				1	1	1
	7	3	2	1	2				2	1	2
	15	5	1	1	1				1	1	1
	12	3	1	1	1				1	1	1
	10	7	3	3	3				2	2	3
	3	3	1	1	1				1	1	1
	3	2	5	3	3				1	1	1
	10	3	3	2	2				1	1	1
			2	2	2				2	2	2
			1	1	1				2	2	4

PENETRATION. SHELLS IN PANELS

24: 1 000 000

PRINCE GEORGE

THE WYOMING STATE OF 40

Bound No. 20

REPORT NUMBER

PENETRATIONS OF SHELL 122-MM 9-4724      LOADED      AT/O

Soviet			
IN PANELS WITH RANGE OF	501	AND	FEET

[illegible]

**CONFIDENTIAL**

# PENETRATION OF SHELLS IN PANELS

DATE 11 July 51

PENETRATIONS OF SHELL 100mm, O-402A DATED 12/50

ALUMINUM SHEET 14 OF 48

12 INCHES Round 10.20

IN PANELS WITH RADIUS OF 50' AND FEET

LOCK NUMBER

PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
37 Cont.			1	1	1
			2	2	2
			3	2	2
			1	1	1
			1	1	1
			1	1	1
			1	1	1
			2	2	2
			1	1	1
			1	1	1
			2	2	1
			2	1	2
			1	1	2
			2	2	1
			2	2	1
			1	1	1
			2	2	2
			1	1	1
			2	2	1
Total	7				71
38	10	3	3	3	2
	3	3	4	3	3
	13	7	3	3	2
	3	3	1	1	1
	4	3	1	1	1
	3	2	1	1	1
	13	3	1	1	1
	5	7	1	1	1
	7	5	1	1	1
	5	3	2	2	1
	3	4	1	1	1
	8	6	2	2	1
	6	5	2	2	2

PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
38 Cont.	7	4	3	2	2
	2	5	1	1	1
			3	3	3
			1	1	1
			4	2	3
			1	1	1
			4	3	3
			1	1	1
			3	2	3
			4	3	3
			1	1	1
			5	3	3
			1	1	2
			1	1	3
			3	2	3
			3	4	3
			1	1	1
			1	1	1
			3	2	5
			3	2	4
			2	2	3
			2	2	2
Total	15				33
39	5	2	3	4	3
	3	4	3	3	4
	3	3	2	1	1
	3	7	2	1	2
	6	6	3	4	3
	4	3	2	2	1
	10	7	2	5	2
	3	4	3	3	3
	4	4	1	1	1

# PENETRATION OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, O-412A, LOADED AT/30  
Soviet  
IN PANELS WITH RADIUS OF 30" AND FEET

DATE BY 200  
PRIORITY NUMBER  
Sheet 15 of 49  
Round No. 20  
SHEET NUMBER  
BOOKLET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
39 Cont			2	2	2
			2	1	1
			1	1	1
			3	2	3
			2	2	2
			2	2	1
			2	2	3
			1	1	1
			2	1	1
			1	1	1
			3	3	2
			2	2	2
			3	2	3
			3	2	2
			5	5	7
			2	2	2
			1	1	1
			2	2	3
			3	2	4
			2	2	2
			3	2	1
			1	1	1
			1	1	1
			2	2	1
			1	1	1
			2	2	2
			1	1	1
			1	1	2
			3	2	2
			2	1	1
			1	1	1
			3	1	1
			1	1	1
			3	2	4

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
29 Cont			3	1	2
			3	2	4
			3	3	6
			3	2	2
			2	2	1
			2	2	2
			1	1	1
			5	3	6
			2	2	2
			2	2	1
			1	1	1
			2	2	2
			1	1	3
Total		9			50
40	6	3	3	2	5
	5	3	2	2	1
41	6	2	2	2	3
	5	5	1	1	1
	9	3	1	1	1
	3	4	2	2	2
	7	3	2	2	2
	4	4	2	1	1
			1	1	1
			2	2	2
			2	2	4
			2	2	4
			2	2	2
			1	1	1
			3	2	3
			1	1	1
			1	1	1
			1	1	1
			5	5	5

CONFIDENTIAL

# PENETRATIONS SHELLS IN PANELS

DATE 31 JUL 77

PENETRATIONS OF STALL 1001, 0-1001, 1001 AT/GO

PROPERTY NO. 1001

Sheet 13 of 40

REMARKS: Round No. 20

IN PANELS WITH AREA OF 301 AND FEET

ADDITIONAL NUMBER

PANEL NUMBERS	PENETRATIONS		PENETRATIONS			PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
40 Cont			1	1	1	41 Cont	6	4	4	4	9
			3	3	2		8	4	3	2	3
			5	3	6		4	3	1	1	1
			1	1	1		10	5	3	2	1
			2	1	1		7	3	3	2	1
			1	1	1		12	7	2	2	2
			3	3	5				2	2	2
			3	2	1				1	3	2
			1	1	1				1	1	1
			3	2	2				3	6	7
			1	1	1				2	2	2
			2	1	1				7	3	7
			2	2	2				4	2	1
			2	2	2				3	2	1
			3	2	2				1	1	1
			2	3	3				2	2	2
			4	3	4				3	2	4
			1	1	2				2	4	10
			3	2	2				3	2	2
			1	1	1				3	3	1
			2	2	2				4	2	6
			2	2	2				1	1	1
			2	2	4				3	1	1
			1	1	1				2	2	2
			4	2	4				3	2	5
			4	2	2				3	2	2
			2	2	1				2	2	2
			1	1	1				3	3	7
Total		2			47				3	2	1
									4	3	3
41	5	3	3	3	5				2	2	2
	12	4	4	1	1				2	2	2
	4	3	4	2	1				5	4	3
	13	5	1	1	1				1	1	1

# PENETRATION SHELLS IN PANELS

DATE

31 Oct

AT

NUMBER

PRIOR TO NUMBER

WITNESS

Sheet 17 of 42

ROCKET NUMBER

Round No. 20

PENETRATION OF SHELL 12mm, O-4004 LOADED 12/80

Soviet

IN PANELS WITH RADIUS OF 30"

AND

FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
41 Cont			1	1	1
			2	3	4
			3	2	3
			2	2	2
			1	1	1
			3	7	3
			4	3	3
			5	3	3
			2	2	2
			2	2	2
			2	2	2
			4	1	1
Total		10			50
42	12	8	3	4	3
	3	3	4	3	10
	13	9	3	2	1
	3	4	3	3	3
	12	3	1	3	3
			2	2	2
			2	2	2
			1	1	1
			3	2	1
			5	4	1
			3	3	1
			1	1	1
			3	1	1
			1	1	1
			2	2	1
			1	1	1
			3	1	1
			3	2	2
			2	2	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
42 Cont			4	2	1
			3	2	1
			1	1	1
Total		5			20
43			3	2	1
			3	1	2
			1	1	1
			5	4	3
			4	2	1
			2	2	1
			3	1	1
			3	1	3
			1	1	1
			3	2	1
			5	3	3
			3	2	2
			4	2	7
			3	1	1
			3	3	2
			3	3	3
			2	2	2
			3	2	3
			3	2	1
			1	1	1
			1	1	1
			3	2	1
			3	3	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			2	2	2
			1	1	1
Total					27

CONFIDENTIAL

# PENETRATIONS OF SHELLS IN PANELS

USE NAME  
PRINTED NAME

DATE 31 July 54

PRIORITY NUMBER

REVISION Sheet 18 of 46

REVISION Round No. 20

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, G-402A

LOADED

AT/90

Soviet

IN PANELS WITH RADIUS OF

30'

AND

FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
43	3	3	3	2	1
			1	1	1
			3	3	3
			1	1	1
			1	1	1
			3	1	1
			3	1	2
			2	2	2
			1	1	1
			3	1	1
			3	1	1
			4	1	1
			3	3	3
			1	1	1
Total		1			14
45			4	3	10
			2	1	1
			4	3	2
			1	1	1
			2	1	1
			1	1	1
			3	2	2
			1	1	1
			2	1	1
			2	2	2
Total					10
47			2	1	3
			1	1	1
			2	1	1
			6	4	5
			2	1	1
			2	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
46 Cont			1	1	1
			2	1	1
			4	2	2
			1	1	1
			1	1	1
			1	1	1
			1	1	1
			1	1	1
			2	1	2
			2	1	2
			1	1	1
Total					13
47	5	4	3	2	2
			3	2	2
			1	1	3
			1	1	1
			3	2	2
			1	1	1
			3	2	2
			1	1	1
			2	1	2
			3	2	4
Total		1			13
48			1	1	1
			1	1	1
			2	1	2
			3	2	2
			2	1	1
			1	1	1
			1	1	1
			2	1	1



# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 31 July 50

FIRING NO NUMBER

PRIORITY 8ER

PENETRATIONS OF SHELL 122 mm, O-402A LOADED AT/SC

Sheet 19 of 49

Round No. 20

Soviet

IN PANELS WITH RADIUS OF 30'

AND

FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
43 Cont			2	1	1
			4	2	3
			3	2	3
			2	1	1
			2	2	1
			1	1	1
			4	2	6
			3	2	4
			2	1	1
			2	1	1
			1	1	1
			1	1	1
			1	1	1
			4	3	3
			3	2	2
			1	1	1
			2	1	1
			2	1	3
Total					23
43	3	2	2	2	1
			1	1	1
			1	1	1
			5	3	5
			2	2	2
			1	1	1
			1	1	1
			2	1	1
			2	2	2
			2	1	1
			1	1	1
			2	1	2
			2	2	2
			3	2	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
49 Cont			1	1	1
			1	1	1
			4	3	5
			1	1	1
			2	2	1
			2	1	1
			1	1	1
			1	1	1
			2	2	2
			2	1	1
Total		1			23
50			3	2	2
			1	1	1
			1	1	1
			1	1	1
			1	1	1
			2	2	1
			2	2	1
			2	1	1
			3	2	1
			3	2	2
			3	2	2
			2	2	2
			1	1	1
			2	2	2
			3	2	1
			1	1	1

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# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER	DATE 31 Jan 46
TESTING NUMBER	
PRIORITY NUMBER	
ZEPHYRUS Sheet 20 of 46	
XXXXXXXXXX Round No. 20	
BUCKET NUMBER	

PENETRATIONS OF SHELL 122mm, O-452A LOADED AT/50

Soviet.

IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
50 Cont			2	1	1
			3	2	2
			3	2	2
			1	1	1
			1	1	1
			2	2	2
Total					24
51	4	3	2	2	2
			3	2	5
			3	2	3
			5	5	6
			1	1	1
			1	1	1
			1	1	1
			2	1	1
			1	1	1
			2	2	1
			2	1	1
			2	1	1
			2	2	2
			2	2	2
			2	1	1
			2	1	1
			1	1	1
			3	2	1
			2	1	1
			2	2	3
			2	2	5
			3	2	3
			2	1	1
			3	2	2
			1	1	1
			2	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
51 Cont			1	1	1
			5	4	2
			1		28
52	4	4	4	4	6
			2	2	2
			1	1	1
			1	1	1
			1	1	1
			3	3	2
			1	1	1
			1	1	1
			1	1	1
			2	1	1
			3	2	2
			7	3	3
			2	2	2
			1	1	1
			2	1	1
			1	1	1
			1	1	1
			3	2	2
			3	2	1
			2	2	2
			1	1	1
			2	2	2
			1	1	1
			1	1	1
Total			1		24
53	6	4	2	2	2
			8	6	3
			1	1	1
			3	2	2

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PENETRATIONS & SHELLS IN PANELS

LOT 11342

DATE 31 July 83

2015/5/27

4194

PRICED BY \_\_\_\_\_

Sheet 21 of 46

~~CONFIDENTIAL~~ Round No. 20

301A\* 404-92

PENETRATIONS OF SHELL 122mm. G-462A LOADED AT/90

IN PANELS WITH	Soviet			
RADI OF	30'	AND		FEET

[illegible]

# PENETRATIONS SHELLS IN PANELS

LITENUM

DATE 31 JAN 48

FILE NO. R. NUMBER

PRIORITY NUMBER

RECOMMENDATION Sheet 22 of 43

SHELL NUMBER

POCKET NUMBER

PENETRATIONS OF SHELL 122mm, C-402A LEADER 17/80

Soviet  
IN PANELS WITH RADIUS OF

30'

AND

FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
55 Cont			3	2	3
			2	1	1
			3	1	3
			3	1	4
			3	1	5
			3	1	2
			1	1	1
			3	3	1
			3	2	2
			4	3	4
			2	1	1
			1	1	1
			3	2	5
			2	2	2
Total	1				39
56	5	5	4	1	2
			2	2	3
			3	1	2
			4	2	3
			2	2	2
			2	1	2
			1	1	2
			3	3	2
			3	3	1
			3	1	2
			3	1	2
			3	2	3
			3	3	3
			3	1	3
			2	2	2
			2	2	2
			4	3	4
			1	1	3

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
56 Cont			2	2	3
			2	2	3
			2	1	2
			3	1	3
			3	1	2
			4	4	2
			2	1	1
			2	1	1
			1	1	1
			2	1	1
			2	2	2
			2	1	1
			3	1	2
			1	1	1
			4	4	3
			2	1	2
			1	1	1
			4	2	3
			2	2	2
			3	1	2
			2	1	2
			4	1	2
			1	1	1
			2	1	1
Total	1				42
57	7	5	4	2	2
	3	4	2	1	1
			1	1	1
			2	1	1
			2	1	2
			4	2	2
			2	2	2
			3	2	1

# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 31 July 50

FIRING NUMBER

PRIORITY NUMBER

Sheet 23 of 48

ROCKET NUMBER Round No. 20

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, O-432A LOADED AT/90

Soviet

IN PANELS WITH RADIUS OF 30"

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
57 Cont			1	1	1
			2	1	2
			2	1	2
			2	1	1
			3	2	1
			3	3	3
			4	4	2
			4	2	3
			3	3	2
			3	2	2
			5	3	2
			1	1	1
			2	1	2
			2	2	2
			2	1	2
			2	2	1
			4	2	3
			3	1	1
			1	1	1
			3	2	1
			2	1	2
			4	2	3
			2	2	2
			1	1	1
			2	1	1
			4	2	1
			3	1	3
			2	1	1
			3	1	2
			2	2	2
			2	2	4
			3	1	1
			3	1	1
			3	2	2

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**REDACTED**

Total

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
57 Cont			4	2	2
			5	4	3
			5	2	2
			2	1	1
			3	1	1
			2	1	1
			1	1	1
			2	2	3
			3	2	3
			3	2	2
			2	1	1
			2	1	1
			2	2	2
			4	1	1
			3	1	1
			1	1	1
			1	1	1
			6	2	4
			1	1	1
			5	3	2
			2	2	1
			2	1	1
			4	1	1
			5	3	3
			3	2	3
			1	1	2
			2	1	1
			3	2	2
			2	2	1
			2	1	2
			5	3	3
			3	1	4
			3	2	4

# PENETRATION OF SHELLS IN PANELS

LOT NUMBER

DATE 31 July 1949

PRINTING NUMBER

PRIORITY NUMBER

REMARKS Sheet 24 of 45

XXXXXXXX Round No. 20

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, G-400A LOADED AT/NO

Soviet IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
53.1			4	2	3
			5	1	3
			4	1	2
			4	1	2
			1	1	1
			2	1	1
			4	3	2
			2	1	1
			2	1	1
			2	1	1
			4	3	2
			2	1	1
Total					12
53.2			4	2	3
			2	1	1
			1	1	1
			2	2	2
			1	1	1
			2	1	1
			2	1	1
			3	2	3
			1	1	1
Total					9
53.3			1	1	1
			1	1	1
			2	1	1
			1	1	1
			1	1	1
Total					5
53.4			2	1	1
			2	1	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	1	2
			1	1	1
			2	1	1
			1	1	1
			3	1	1
			2	2	2
			1	1	1
			4	2	2
Total					10
53.5			4	2	2
			2	1	2
			3	1	1
			2	2	2
			1	1	1
			2	2	2
			4	2	2
			1	1	1
			2	1	1
			1	1	1
			3	2	1
Total					11
53.6			3	2	3
			2	1	1
			2	2	2
Total					3
53.7			4	4	1
			1	1	1
			2	1	1
			2	1	2
			1	1	1
			1	1	1

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## PENETRATION OF SHELLS IN PANELS

167-80

DATE 51 July 5

512143 1 10 5/10/52

00 02171 11 0982

PENETRATIONS OF S-ELL 122nm, 0-400A LOADED AT/50

Sheet 25 of 48

Round No. 20

IN PANELS WITH	Soviet	AND	FEET
82011 SE	30'		

4027 124754

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
69.1 Contd			3	2	4
			2	1	2
			2	1	3
			1	1	1
			3	2	3
			1	1	1
			1	1	1
Total					13
69.2			5	3	7
			2	1	3
			1	1	1
			1	1	1
			5	3	5
Total					5
69.3	7	3	3	2	2
	8	4	2	1	1
			1	1	1
			1	1	1
			1	1	1
			5	3	3
			2	1	2
			2	1	2
			3	3	3
Total		2			9
69.4			4	2	4
			1	1	1
			1	1	1
			2	2	2
			1	1	1
			2	2	2
			3	3	3
Total					10

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
33.4			1	1	1
			1	1	1
			2	1	1
			1	1	1
Total					11
33.5	11	8	2	2	2
			2	2	2
			3	1	2
			2	1	1
			3	2	2
			2	2	2
Total		1			6
33.6	4	4	3	2	2
			2	1	1
			3	3	1
		1			3
33.1	13	8	2	2	5
			1	1	1
			4	3	4
			1	1	1
			2	1	1
			2	1	1
			1	1	1
			1	1	1
			3	2	2
			1	1	1
Total		1			10
33.2			2	1	1
			3	2	2
			1	1	1

**SECRET**

**2**

## PENETRATIONS OF SHELLS IN PANELS

107 M M

DATE 31 July

FILING 92-2504-39

22122177 11-4-63

PENETRATIONS OF SHELL 122mm. 0-4 12A LOADED AT 90

Sheet 26 of 46

SECRET

320.7 51.4 193

Soviet  
IN PANELS WITH RADIUS OF 301 AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
60.2			4	3	3
Cont			4	3	4
			1	1	1
			1	1	2
			3	2	2
			3	2	2
			2	2	1
			3	2	2
			1	1	1
			2	2	2
Total					13
60.3	4	3	7	4	6
	7	4	1	1	1
	5	3	2	2	2
			1	1	2
			3	2	2
			2	2	2
			1	1	3
			3	2	4
			4	3	7
			5	4	7
			1	1	1
			2	2	5
			2	2	2
			1	1	1
			3	2	1
			2	2	1
			1	1	1
			3	2	4
			1	1	1
			5	2	1
			4	3	3
			6	3	2

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# PENETRATIONS OF SHELLS IN PANELS

LOT NO.

DATE: 31 July 53

FIRING RECORD NUMBER

REPORT NUMBER

PENETRATIONS OF SHELL 122mm, C-492A LOADED AC/30

ATTACHMENT Sheet 27 of 46

ROCKET ROUND NO. 20

IN PANELS WITH RADIUS OF

30 FT

AND

FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
50.4			2	2	2
Cont			1	1	1
			2	2	1
Total		2			23
50.5			10	4	4
			2	1	1
			2	2	2
			3	2	2
			1	1	1
			2	2	2
			3	3	5
			3	2	2
			2	2	5
			3	2	4
Total					10
51.3	12	4	4	3	2
			2	2	2
			1	1	1
			2	2	2
			3	2	2
			1	1	1
			2	1	1
Total		1			7
51.1			2	2	2
			5	2	2
			1	1	1
			2	2	2
			2	2	2
			3	2	4
			3	2	3
			3	3	3

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
51.1			6	5	3
Cont			12	4	4
			3	2	2
			1	1	1
			1	1	2
			4	3	1
			2	1	1
			1	1	1
Total					17
51.2	3	5	3	2	3
	5	4	1	1	1
			3	2	1
			2	1	1
			3	3	3
			1	1	2
			3	2	4
			3	2	2
			2	2	3
			3	3	3
			1	1	1
			3	2	3
			5	2	5
			4	2	3
			3	2	4
			2	2	2
			2	2	2
			1	1	1
			1	1	1
			2	1	1
Total		2			20
51.3	4	3	5	2	5
	5	3	4	2	2

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# PENETRATIONS OF SHELLS IN PANELS

TEST NO. \_\_\_\_\_ DATE: 31 July 50

STATION NO. \_\_\_\_\_

PRIORITY NUMBER \_\_\_\_\_

YIELDING SHEET 23 of 40

ROCKINGLY Round No. 20

ROCKET NUMBER \_\_\_\_\_

PENETRATIONS OF SHELL 122mm. O-4-2A LOADED AT 90°

Soviet

IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
31.3	5	3	1	1	1				2	2	2
lost	9	2	1	1	1				2	2	2
			1	1	1				4	4	4
			2	2	2	Total		3			15
			2	2	2						
			1	1	2	31.5	5	5	2	2	2
			2	2	2		5	3	4	3	3
			1	1	1		11	5	1	1	1
			7	4	5		5	2	2	1	1
			4	3	5				2	1	1
			5	2	5				1	1	1
			3	3	2				3	3	3
			4	3	4				1	1	1
			3	1	3				3	2	2
			1	1	1				3	2	2
			2	2	2				1	1	1
			1	1	1				3	2	4
			2	2	3				4	3	3
			2	1	1				2	2	2
			1	1	1				3	2	2
Total		4			44				5	3	5
									1	1	1
31.4	5	4	5	3	3				1	1	1
	10	7	4	2	4				2	2	2
	12	5	2	2		Total		4			19
			1	1	1						
			2	2	2	31.6	5	4	3	2	4
			2	1	1		4	3	5	3	4
			2	2	5		7	4	3	2	2
			2	2	2		3	3	2	2	1
			2	2	2		10	4	7	5	4
			2	1	1		4	3	3	3	2
			3	3	3				3	2	3
			2	1	1				3	2	3

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# PENETRATION OF SHELLS IN PANELS

LOT NUMBER

DATE 31 JUL 50

FIRING

NO NUMBER

PRIORITY NUMBER

INTERSECTION Sheet 30 of 45

PROBABILITY Round No. 20

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, O-432A LOADED AT/90

IN PANELS WITH RADIUS OF 30'

AND

FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
62.3			2	2	9
Cont			4	1	2
			6	2	9
			2	2	5
			7	3	9
			4	3	6
			4	5	4
Total		6			17
62.4	4	4	3	2	2
	5	4	1	1	1
			1	1	1
			4	2	2
			3	2	2
			1	1	1
			3	1	1
			2	1	1
			2	2	2
			6	3	5
			4	2	3
			3	2	2
			2	2	2
			3	2	3
			3	2	2
			2	2	2
			3	5	7
			3	4	9
			1	1	1
			2	1	1
			3	3	5
			1	1	1
			2	2	2
			3	3	4
			2	2	2
			2	2	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	1	1
			1	1	1
Total		2			27
62.5	5	4	5	2	4
			3	3	2
			7	4	3
			1	1	1
			4	3	3
			2	2	1
			1	1	1
			3	3	2
			5	3	6
			2	2	2
			3	3	4
			3	2	2
			1	1	1
			5	4	5
			4	3	5
			3	4	4
			3	2	2
			1	1	1
			3	2	5
			2	1	1
			3	2	2
			2	4	6
			1	1	1
			3	2	3
			4	4	4
			2	1	1
Total		1			26
62.6	5	4	8	4	3
	4	4	5	3	3

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# PENETRATIONS OF SHELLS IN PANELS

LOT NO. 2 DATE 31 July 50  
GROSS ROUND NUMBER  
PRIORITY NUMBER  
CONTINUED Sheet 31 of 46  
ROUND NO. 20  
ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, C-462A LOADED AT/80

IN PANELS WITH RADIUS OF 301 AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	* DTH	LENGTH	WIDTH	DEPTH
62.5			2	1	1
Cont			2	1	1
			6	3	3
			1	1	2
			1	1	1
			1	1	1
			4	2	2
			1	1	1
			2	1	1
			3	1	1
			1	1	1
			3	1	3
			5	1	3
			9	3	4
			6	3	4
			2	2	1
			9	4	7
			6	3	4
			2	2	1
Total		2			21
62.1	7	5	2	1	1
	10	6	1	1	1
			2	2	2
			5	2	2
			5	3	4
			1	1	1
			2	1	1
			1	1	1
			5	3	4
			1	1	1
			3	2	2
			2	1	2
			4	3	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			7	3	3
			2	1	1
			1	1	1
			2	1	1
			3	2	4
			1	1	1
			1	1	1
			2	2	3
			4	3	4
Total		2			23
62.2	7	5	5	3	3
	8	4	4	2	3
			2	1	1
			1	1	1
			2	1	1
			1	1	2
			3	2	3
			3	2	2
			5	3	3
			2	1	1
			3	1	2
			3	3	2
			2	1	1
			1	1	1
			1	1	1
			1	1	1
			1	1	1
			1	1	1
			4	3	2
			5	3	2
			1	1	1

CONFIDENTIAL

# PENETRATION OF SHELLS IN PANELS

LOT NAME

DATE 31 July

FIRING NUMBER

PRIORITY NUMBER

XXXXXXXXX Sheet 32 of 49

SHELL NUMBER

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/80

IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
65.2 Cont			5	4	4
			5	3	4
			1	1	1
Total		2			25
63.3	6	4	4	3	4
			3	2	3
			8	2	4
			2	1	1
			3	2	6
			3	2	2
			1	1	1
			1	1	1
			3	2	2
			1	1	1
			3	2	2
			1	1	1
			5	3	3
			2	2	1
			5	2	2
			3	1	4
			2	2	2
			2	2	2
			3	2	1
			2	2	1
			3	1	2
			1	1	1
Total		1			22
63.4	6	4	3	5	4
	3	3	2	1	1
	7	5	1	1	1
	7	5	1	1	1
	7	3	2	3	5

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
63.4 Cont	7	5	1	1	1
	4	3	2	2	1
			2	2	2
			6	3	3
			3	2	3
			3	1	2
			2	2	3
			1	1	1
			3	1	2
			1	1	1
			2	2	1
			6	3	7
			3	3	2
			2	2	2
			2	2	2
			3	2	2
			2	1	2
			1	1	1
			2	2	1
			3	1	2
			3	2	2
			5	2	1
			1	1	1
			2	2	2
			2	2	2
			2	2	1
			1	1	1
Total		7			32
63.5	4	3	7	3	6
	8	3	4	3	2
	5	3	2	2	2
			2	2	1
			4	3	5

CONFIDENTIAL

B-11822

PROBG-737 18 FEB 48 FORMEALY SPOT-7-281						PENETRATIONS OF SHELLS IN PANELS						FIRING NO. AND NUMBER			DATE 31 July 50		
PENETRATIONS OF SHELL 122mm, G-462A						LOADED AT/20						Sheet 33 of 46					
Soviet												Round No. 20					
IN PANELS WITH RADII OF 30'						AND						FEET					
PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS								
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH						
63.5			2	1	2				3	2	4						
Cont			1	1	1				3	2	6						
			1	1	1				7	4	4						
			1	1	1				1	1	1						
			2	2	1				6	3	2						
			3	2	1				2	1	1						
			4	3	6				2	2	3						
			5	2	4				3	2	1						
			1	1	1				4	3	3						
			3	2	2				2	1	1						
			2	2	2				1	1	1						
			2	1	1				2	1	2						
			1	1	1				1	1	1						
			1	1	1				2	2	2						
			1	1	1				1	1	1						
			6	3	2				1	1	1						
			3	2	6				1	1	1						
			5	3	2				1	1	1						
			1	1	1	Total		5			29						
			1	1	1												
Total		3			25				TOTALS								
						30'	Radius	423			2056						
63.2	4	3	1	1	1												
	5	4	1	1	1												
	16	7	1	1	1												
	6	6	3	1	1												
	5	3	3	1	4												
			5	2	7												
			2	1	1												
			2	1	1												
			1	1	1												
			1	1	1												
			1	1	1												
			2	1	1												

CONFIDENTIAL

# PENETRATION OF SHELLS IN PANELS

LOT NAME

DATE 31 JUL 50

FIRING NO NUMBER

PRIORITY NUMBER

REMARKS Sheet 34 of 48

ROUNDS Round No. 20

BUCKET NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/NO

Soviet

IN PANELS WITH FACIL OF

601

AND

FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
13			4	2	2
Total					1
17			4	3	5
Total					1
20	12	8			
Total		1			
23	5	3	3	2	2
	4	3	3	3	3
			1	1	1
			3	2	2
			1	1	1
			3	3	1
			1	1	1
			1	1	1
			3	2	1
Total		2			9
24	4	3	2	1	1
			3	2	1
			2	1	1
			4	2	1
			3	3	5
			4	3	4
			2	1	1
Total		1			7
25	5	3	3	1	1
			6	2	4
			1	1	1
			1	1	1
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
25 Cont			2	1	1
			2	1	2
			1	1	1
			1	1	1
Total		1			9
28	4	3	3	3	3
	5	4	3	2	3
	4	2	4	3	3
	6	3	2	2	1
			2	1	1
			4	2	5
			2	1	2
			3	3	5
			1	1	4
			4	3	4
			1	1	1
			1	1	1
			2	2	1
			2	2	1
			1	1	1
Total		4			19
27	5	4	5	3	2
	5	4	3	2	2
	5	4	2	1	1
	7	4	3	2	4
	24	10	2	2	1
			1	1	1
			2	2	2

CONFIDENTIAL

# PENETRATIONS OF SHELLS IN PANELS

LOT NAME

DATE 31 July 48

FIRING NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-4824 LOADED 17/50

Sheet 35 of 46

Soviet

Round No. 20

IN PANELS WITH RADIUS OF 60' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
27			3	1	2	Total		6			19
			4	4	3						
Total		5			9	30	2	4	2	1	1
							7	7	4	4	4
28	7	4	2	2	5				1	1	1
	7	6	1	1	1				4	3	3
	5	3	2	1	3				4	3	1
	5	4	4	3	1				2	1	2
			3	2	1				1	1	1
			3	2	1				1	1	1
			1	1	1				4	4	7
			2	2	1				1	1	1
			1	1	1				1	1	1
Total		4			8				1	1	1
									3	2	2
29	8	4	7	4	7				1	1	1
	9	6	1	1	1				3	2	3
	7	4	3	1	2	Total		2			15
	6	4	1	1	1						
	12	5	3	3	3	31	8	6	6	4	6
	7	6	4	3	3		4	3	2	1	1
			2	2	2		6	6	1	1	1
			2	2	3		6	4	1	1	2
			2	1	1				5	3	3
			2	2	2				3	3	4
			1	1	1				3	2	1
			3	2	2				2	1	1
			2	1	1				4	3	1
			2	1	2				2	2	2
			3	2	3				1	1	1
			1	1	1				2	1	1
			3	2	2				4	3	1
			1	1	1				2	1	1
			4	3	1				4	3	4

CONFIDENTIAL



# PENETRATIONS OF SHELLS IN PANELS

LOT NAME

FIRING RECORD NUMBER

PRIORITY NUMBER

DATE 31 Jul 48

PENETRATIONS OF SHELL 122mm, D-402A LOADED AT/90

Soviet

IN PANELS WITH RADIUS OF

60

AND

FEET

XXXXXXXXXX Sheet 35 of 46

SHELL NUMBER

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
31 Cont			2	2	1
			2	2	1
			2	1	1
			2	1	1
			2	2	2
Total		4			20
32	4	5	3	2	4
	7	6	1	1	1
	5	4	1	1	1
	10	6	1	1	1
	3	4	1	1	1
	3	3	2	1	2
	8	5	2	1	2
	4	4	1	1	1
	12	4	6	3	3
	16	3	5	2	2
	13	6	1	1	1
	5	4	2	1	1
			5	4	3
			3	2	2
			5	3	3
			1	1	1
			1	1	1
			4	3	6
			3	2	2
			2	1	1
			1	1	1
			3	2	4
			3	3	3
			4	2	4
			2	2	1
			2	1	1
			2	2	5

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
32 Cont			5	3	4
			3	2	2
			1	1	1
			1	1	1
Total		12			31
33	9	8	4	3	5
	3	4	3	4	7
	10	4	4	2	3
	13	5	1	1	1
	12	4	4	3	3
	9	6	4	3	2
	5	4	3	3	4
	4	4	4	3	6
	9	4	2	2	1
	4	3	3	2	1
	5	3	3	2	3
	9	3	5	2	1
	13	3	5	3	3
	12	3	5	4	2
	3	3	3	4	5
	13	4	4	2	2
	3	5	10	4	5
	9	4	5	3	3
	14	5	6	3	3
	5	3	1	1	1
	13	10	5	4	6
	12	3	4	3	2
	4	3	1	1	1
	3	3	4	2	2
	15	8	1	1	1
			4	2	2
			3	1	2
			1	1	1

# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 31 July 53

FIRING NUMBER

PRIORITY NUMBER

Sheet 37 of 46

Round No. 20

POCKET NUMBER

PENETRATIONS OF SHELL 120mm. O-402A LOADED AT/50

Soviet IN PANELS WITH BASIS OF 601 AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
33 Cont			3	1	1
			4	2	2
			4	2	2
			1	1	1
			3	5	3
			1	1	1
			3	2	1
			3	1	1
			3	2	2
			4	4	3
			3	2	1
			5	3	5
			4	5	2
			2	1	1
Total		25			42
34	12	3	4	4	2
	13	3	4	4	2
	3	3	3	2	2
	13	3	2	1	1
	3	3	4	2	2
	11	3	4	2	3
	4	4	2	1	1
	10	4	3	3	1
	10	4	2	1	1
	5	3	3	2	1
	12	4	4	2	2
	7	3	3	2	3
	12	3	1	1	1
	19	5	4	3	4
	9	7	2	2	2
	5	4	2	1	1
	13	3	3	3	1
	14	7	3	5	6

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
34 Cont	9	3	1	1	1
	4	3	2	1	1
	9	6	4	1	2
	13	7	2	2	1
			4	2	5
			4	1	4
			4	2	4
			4	1	2
			3	1	1
			3	1	1
			4	2	1
			1	1	1
			2	2	2
			4	3	2
			3	2	1
			1	1	1
			3	4	4
			4	4	7
			4	2	4
			2	2	2
			4	1	1
			2	2	2
			2	2	4
			1	1	1
			3	2	1
			7	3	5
			1	1	1
			3	4	2
			7	4	3
Total		22			47
35	3	7	4	3	1
			4	2	2
			3	2	2

CONFIDENTIAL

UNCLASSIFIED

# PENETRATION OF SHELLS IN PANELS

LOT NUMBER

DATE 31 July 53

WIRING NO NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, C-402A LOADED AT/30

EXAMINATION Sheet 33 of 46

TEST NUMBER Round No. 20

Soviet  
IN PANELS WITH RADIUS OF 30" AND FEET

SECRET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
35 Cont	12	4	5	5	2
	3	4	3	2	1
	5	5	2	1	1
	19	5	3	3	1
	9	5	4	3	1
	14	4	2	1	1
	5	4	3	2	2
	9	6	2	1	1
			2	1	1
			3	2	1
			2	2	2
			1	1	1
			5	2	1
			1	1	1
			2	1	1
			3	2	1
			5	3	4
			12	4	7
			2	1	1
			2	1	1
			1	1	2
			3	1	1
			4	3	1
			3	2	1
Total		11			27
36	12	5	4	4	2
	7	2	4	2	3
			7	4	3
			1	1	1
			3	1	2
			1	1	1
			3	4	2
			2	2	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
36 Cont			1	1	1
			3	2	1
			1	1	1
Total		2			11
37	8	4	6	4	6
	4	4	4	2	3
	7	5	4	3	2
	12	5	1	1	1
	11	11	5	3	6
			5	3	3
			3	2	2
			3	5	3
			3	2	2
			5	4	4
			4	2	2
Total		5			11
38	2	4	4	3	1
	5	3	5	3	2
	5	5	5	5	4
			2	2	2
			5	2	2
			3	2	1
			4	3	3
			4	4	4
			5	2	2
			4	2	3
			4	2	3
			3	2	1
			1	1	1
Total		3			14

CONFIDENTIAL

REDACTED

# PENETRATIONS OF SHELLS IN PANELS

LOT NO. DATE 31 July 58  
FIRING NO. AND NUMBER  
PRIORITY NUMBER  
SHEET NO. 39 of 46  
ROUND NO. 20  
ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, O-400A LOADED AT/30  
IN PANELS WITH RADIUS OF 60' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
39	12	5	4	3	3
			2	1	1
			4	3	1
			4	3	2
			1	1	1
			3	1	1
			2	1	1
			4	1	1
			4	2	1
			7	4	6
			1	1	1
			2	2	1
			1	1	1
			2	2	1
			1	1	1
			6	3	4
Total		1			16
40	11	4	2	2	1
	7	4	5	3	2
	4	5	3	2	2
			3	2	1
			3	2	1
			4	2	2
			3	2	1
			2	1	1
			1	1	1
			5	2	9
Total		3			10
41	6	6	4	3	1
			4	3	2
			4	4	1
Total		1			3

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
42			3	1	1
			1	1	2
			4	3	2
Total					3
43			5	4	6
			7	3	2
			3	2	1
			1	1	1
			3	2	3
			2	2	1
Total					6
44			2	2	2
			2	3	1
			2	2	1
			1	1	1
			3	2	2
			1	1	1
			3	2	2
Total					7
45			3	3	3
			3	2	2
			3	2	2
			2	1	1
			2	2	2
Total					6
46	15	3	2	1	1
			4	4	1
			4	2	2
			1	1	1
Total			1	1	1

CONFIDENTIAL

# PENETRATIONS OF SHELLS IN PANELS

LOG NUMBER

DATE 31 July 47

FIRING RECORD NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, C-422A LOADED AT/90

SHEET NUMBER Sheet 40 of 46

ROUND NO. 20

IN PANELS WITH RADIUS OF 60" AND FEET

BUCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
46 Cont			2	1	1
			1	1	1
			1	1	1
			2	1	1
			4	1	1
			1	1	1
			2	2	2
Total		1			12
47	6	4	4	3	2
			1	1	1
			2	1	1
			5	1	1
			1	1	1
			3	2	2
			2	1	1
			2	2	1
Total		1			8
48			1	1	1
			1	1	1
			1	1	1
			1	1	1
			2	1	1
Total					5
49			3	2	1
			1	1	1
			1	1	2
Total					3
50			2	2	1
Total					1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
51			3	2	2
			4	3	3
			1	1	1
			1	1	1
			2	2	2
			3	3	1
			2	1	2
			3	3	2
			1	1	1
			6	3	3
Total					10
52			3	3	2
			2	1	1
			2	1	1
			4	1	1
			1	1	1
			5	4	4
Total					6
53			1	1	1
			2	2	4
			4	4	2
			2	2	2
			2	2	1
			1	1	1
			3	3	2
			1	1	1
Total					6
54			1	1	3
			3	3	2
			1	1	1
			3	3	1

# PENETRATIONS OF SHELLS IN PANELS

100 NAME

DATE: 1 July 50

STRIP NO. AND NUMBER

PRIORITY NUMBER

XXXXXXXXXX Sheet #1 of 48

XXXXXXXXXX Round No. 20

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, C-462A LOADED AT/90

Soviet

IN PANELS WITH RANGE OF

60'

AND

FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
54 Cont			1	1	2
			1	1	1
			1	1	1
			3	1	1
Total					8
55	5	5	2	2	2
			1	1	1
			1	1	1
			4	4	2
			3	2	2
			1	1	1
			1	1	1
			3	2	2
			1	1	1
Total		1	5	4	3
					10
56			3	2	2
			4	2	4
			4	4	1
			1	1	1
			3	2	1
			3	2	3
			2	2	1
			2	2	1
			3	3	2
			3	2	2
			2	1	1
			4	2	3
			3	2	2
			2	2	2
Total					14

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
57			5	2	1
			1	1	1
			3	3	2
			2	2	2
			3	1	1
			2	2	2
			1	1	1
Total					7
58.1	9	4	3	2	1
			2	2	2
			4	2	4
Total		1			3
58.2	12	3	3	2	2
Total		1			1
58.3	7	7	5	4	3
			1	1	1
			2	1	1
Total		1			3
59.1			3	2	2
			1	1	1
			2	2	1
			6	4	3
			1	1	1
			4	4	5
			4	3	3
Total					7
59.2	8	6	5	4	8
	3	5	5	3	2
			5	3	5

CONFIDENTIAL

SECRET

# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE: 1 July 53

FIRING NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, 0-462A LOADED AT/30

SHEET NUMBER Sheet 42 of 46

ROCKET NUMBER Round No. 20

IN PANELS WITH RADIUS OF 60' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
59.2			2	1	1
Cont			1	1	1
			4	3	1
			2	2	2
			2	2	1
			1	1	1
			5	4	5
			6	2	3
			6	3	3
Total		2			12
59.3			4	3	1
			3	2	2
			2	2	2
			3	2	2
			5	3	4
			1	1	2
			2	2	2
			2	2	1
			3	2	4
			4	3	4
			1	1	1
			2	2	2
Total					12
60.1			7	3	2
			2	2	1
			10	5	5
			3	2	1
			7	7	4
			6	3	2
			1	1	1
			2	1	1
			4	3	4

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
60.1			1	1	1
Cont			1	1	1
			5	3	2
			5	2	2
			10	4	4
			2	1	1
			2	2	2
			2	2	2
			5	2	3
			6	2	2
			6	2	5
			1	1	1
Total					21
60.2			5	3	2
			8	2	2
			2	2	2
			5	3	2
			5	2	1
			2	1	1
			2	1	1
			1	1	1
			1	1	1
			1	1	1
			4	2	1
			5	3	2
			4	2	2
			4	2	5
			3	2	2
			2	2	1
			5	3	3
			3	2	2
			1	1	1
			2	1	1

CONFIDENTIAL

PENETRATIONS SHELLS IN PANELS

LOT NUMBER

DATE 31 July 55

FIRING R. NUMBER

PRIORITY NUMBER

WFFYNNPBOX Sheet 43 of 46

WFFYNNPBOX Round No. 20

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, C-462A LOADED AT/90

IN PANELS WITH RADIUS OF 60" AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
60.2 Cont			5	2	3
Total					21
60.3			5	2	2
			2	2	1
			2	1	1
			2	2	2
			2	2	4
			3	2	1
			12	4	4
			2	2	1
			2	2	1
			3	1	1
			1	1	1
			5	2	2
			4	2	2
			2	2	1
			7	3	4
			2	1	1
			2	1	1
			2	3	1
			6	3	6
			3	1	5
			4	5	2
			2	1	1
			8	3	2
Total					63
61.1			5	4	5
			2	2	2
			1	1	1
			1	1	1
			2	2	1
			5	3	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	2	1
			2	1	1
			5	3	2
			2	2	2
			2	1	1
			1	1	1
			2	1	1
			1	1	1
			5	3	5
			1	1	1
			5	5	2
			4	2	2
			6	2	3
			1	1	1
			1	1	1
			3	1	1
			4	2	2
			2	2	2
			2	1	1
			4	3	4
			2	2	1
			1	1	2
Total					23
61.2			2	2	1
			3	1	3
			3	1	1
			2	2	1
			2	1	1
			4	2	2
			4	2	2
			4	3	2

CONFIDENTIAL



# PENETRATION: SHELLS IN PANELS

LOT NUMBER

DATE 31 July 57

FORWARD NO NUMBER

PRIORITY NUMBER

HYPERSONIC Sheet 44 of 48

Round No. 20

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, O-4624 LOADED AT/3

Soviet

IN PANELS WITH RADIUS OF

60'

AND

FEET

PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
61.2			1	1	1
Cont			2	1	6
			1	1	1
			5	4	4
			4	2	2
			2	2	2
			7	4	3
			6	2	2
			1	1	1
			10	3	7
			8	3	3
			5	2	5
			1	1	1
			1	1	1
			6	2	1
Total					23
61.3			4	2	3
			2	2	1
			1	1	1
			8	4	4
			3	2	1
			3	4	5
			6	3	3
			1	1	1
			1	1	1
			4	2	2
			1	1	1
			2	1	1
			1	1	1
			4	3	2
			2	2	1
Total					15

PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
62.1			4	4	2
			1	1	1
			5	2	2
			4	2	2
			6	2	2
			2	1	1
			1	1	1
			4	2	1
			2	3	4
			3	2	2
			3	3	3
			2	1	1
			3	1	1
			9	3	3
			6	3	2
			3	3	3
			3	2	2
			2	1	1
			1	1	1
			1	1	1
Total					20
62.2	6	6	6	3	6
			2	2	4
			3	1	1
			2	1	1
			1	1	1
			4	3	4
			12	3	3
			2	3	2
			5	4	1
			5	2	2
			1	1	1
			2	2	1

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## PENETRATION OF SHELLS IN PANELS

1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

DATE 31 July 75

**F I R I N G**

NOV 28 1964

POSITIVITY

PENETRATIONS OF SHELL 122mm. C-402A LOADED 11/90

0089709100 Shot 46 02 40

[illegible]

IN PANELS WITH RATIO OF 60:1 AND FEET

2001 1000000

PANEL NUMBER	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
52.2			1	1	1
Cont			6	2	5
			6	2	2
			7	3	3
			3	1	1
			1	1	1
			5	3	2
			5	2	5
			4	3	2
			1	1	1
			2	1	1
			1	1	1
Total		1			24
62.5	7	7	3	2	1
	5	3	1	1	1
			3	3	2
			3	2	2
			2	2	1
			2	2	1
			3	2	2
			4	3	2
			5	3	3
			4	3	1
			2	2	1
			2	2	1
			1	1	1
			4	3	3
			1	1	1
			3	3	3
			3	3	3
			2	1	1
			2	1	1

PANEL NUMBER	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			8	4	3
			2	1	1
			2	1	1
			2	2	1
			2	1	2
			1	1	1
			3	2	1
Total		2			27
GS.1	8	6	3	2	2
			1	1	1
			2	2	2
			3	3	7
			1	1	1
			1	1	1
			3	2	2
			1	1	1
			2	1	1
			7	3	3
			2	1	1
			2	1	1
			4	3	2
			2	1	1
			2	1	1
			3	3	1
Total		1			16
GS.2	7	3	3	2	2
	5	4	5	4	5
	8	7	2	2	4
	7	4	3	2	2
	7	3	2	2	2
	7	5	2	1	1

GATE 31 July 5

FIRING                      92 MEUSER

NOV 2 1999

DAY 745000 Sheet 46 of 46

SEVENTHSEX Round No. 20

SECRET NUMBER

PENETRATIONS OF SHELLS 22400. 0-4627

LOADS 2m/90

Soviet

IN PANELS WITH RADIO OF

508

ANC

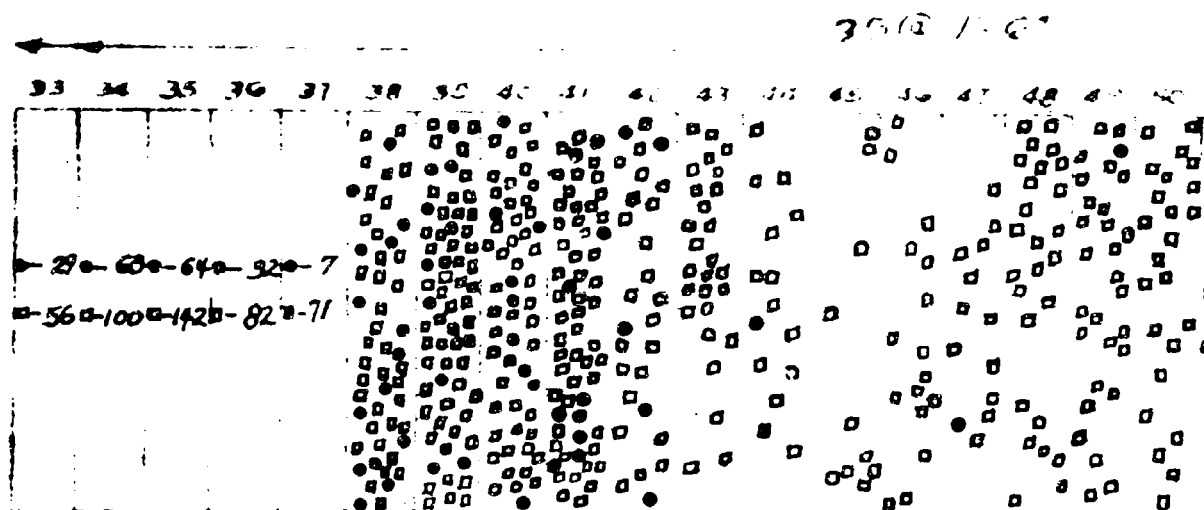
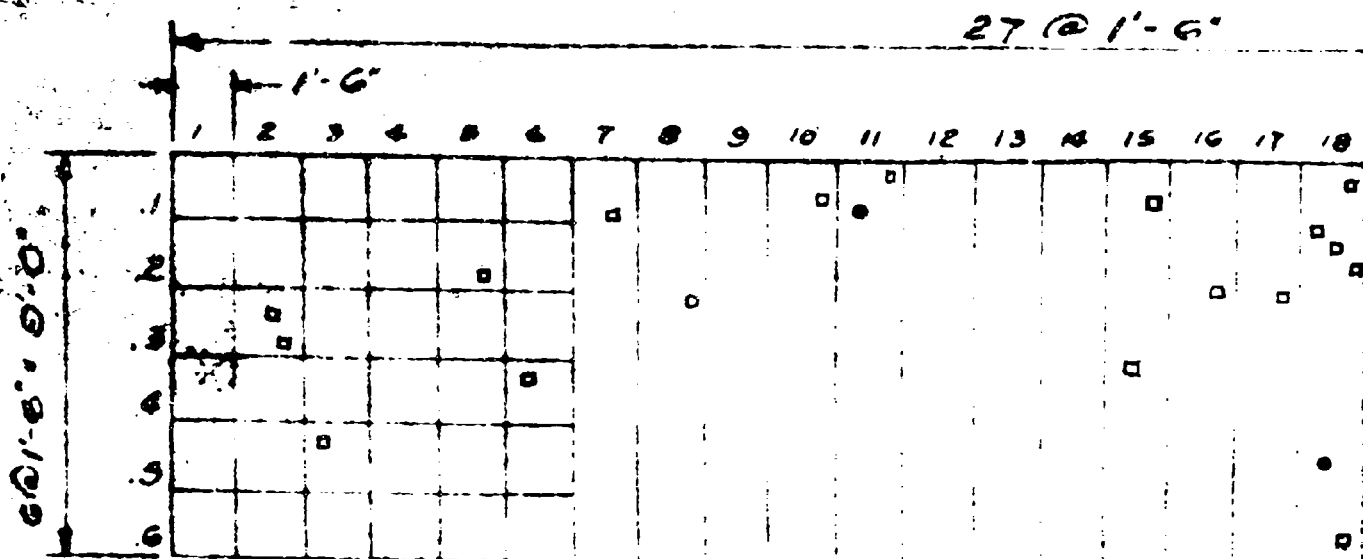
F E E T

ARMY...ON SPRINGER PAC-ME GROUND. MD 446

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PANEL A

30 FT RADIUS 18



1" NO. 3 FINE BOARDS (DOLBY) PLACED

DATE: 31 JULY 53 RD.NO. 20

PERFORATIONS: ●

SHELL: 122MM, SOVIET

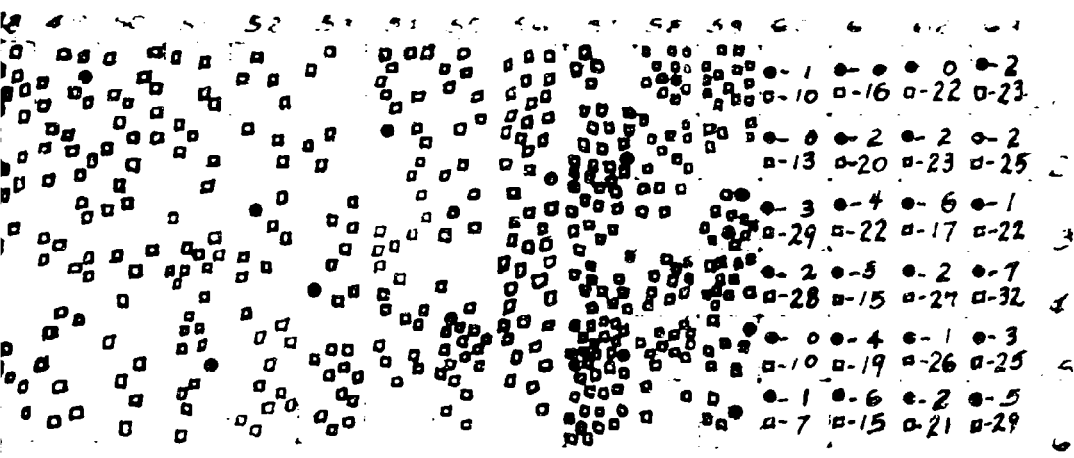
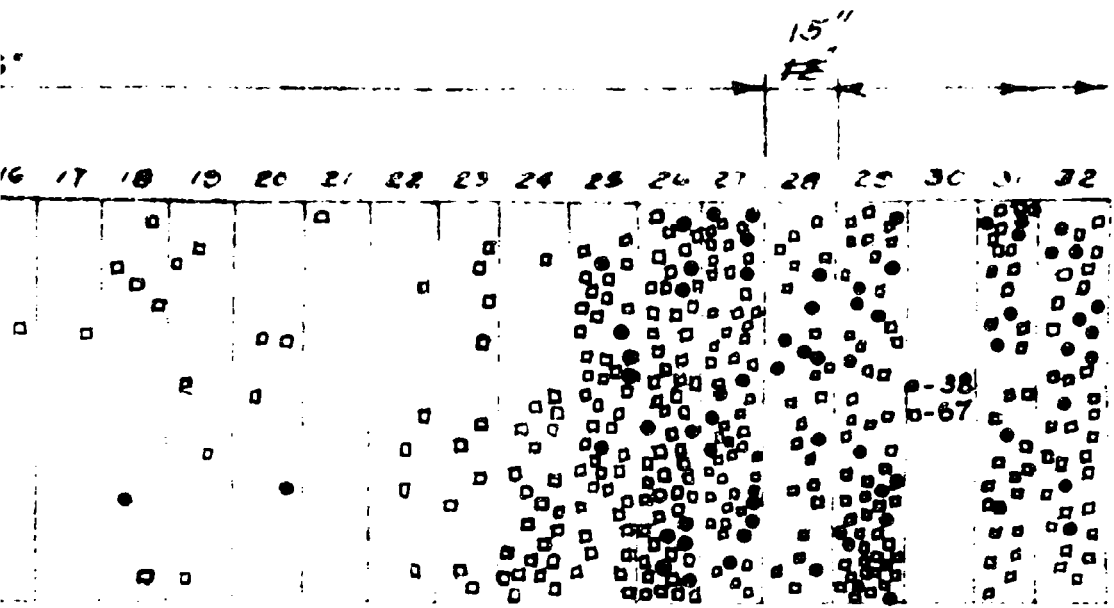
PENETRATIONS: □

POSITION OF SHELL: HORIZONTAL

CONFIDENTIAL

A

S 180° ARC



2

GROUP FACTORALLY

NS: ● = 426

NS: □ = 2056

RANGE OF DATA IN SECTION

ANALYSIS OF DATA FOR

NUMBER AND DISTRIBUTION OF FRAGMENTS (30 FT RADIUS)

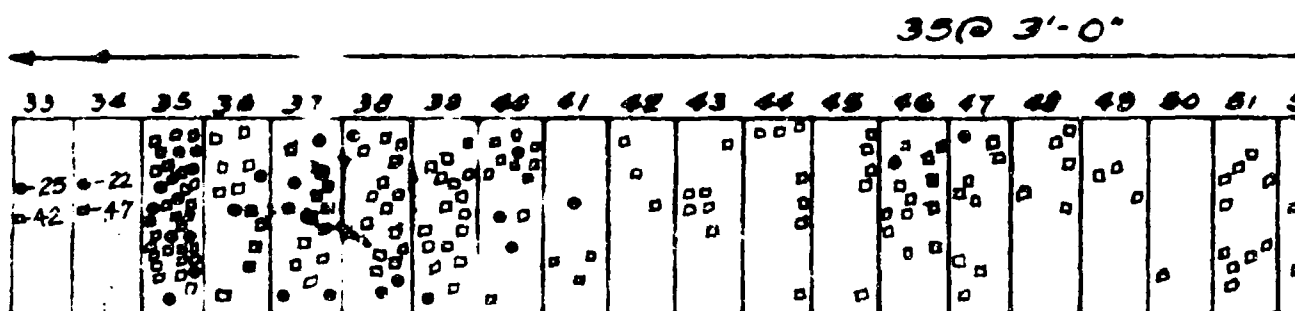
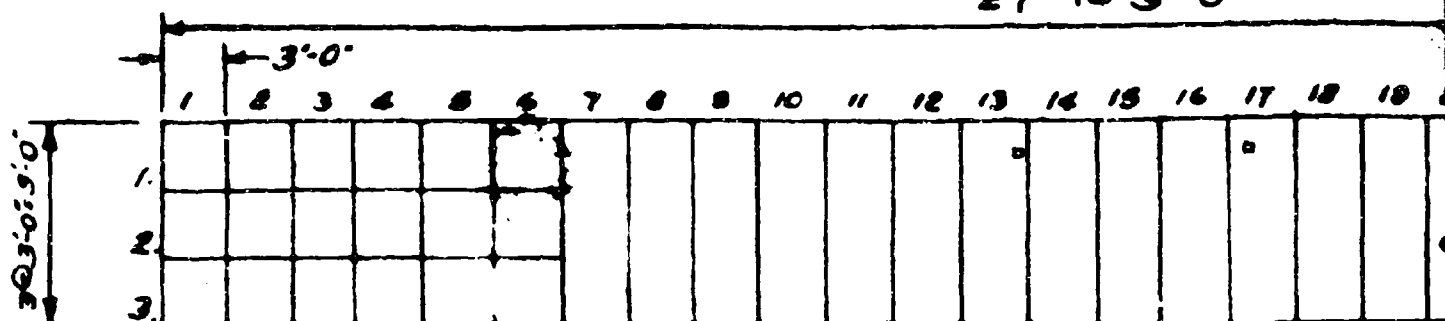
ABOVE THE SURFACE OF THE GROUND AND

202A

B-11822

CONFIDENTIAL

PANEL B  
60 FT. RADIUS 180° AREA  
27 @ 3'-0"



1" NO. 3 PINE BOARDS (DRESSED) PLACED VERTICALLY

DATE: 31 JULY 53 RD.NO. 20

PERFORATIONS: 134

SHELL: 122 MM, SOVIET

PENETRATIONS: 743

POSITION OF SHELL: HORIZONTAL

B  
5 180° ARC  
0°



2

PLACED VERTICALLY.

● = 134

□ = 743

# RANGE OPERATIONS SECTION

LAYOUT OF PANELS  
FOR  
NUMBER AND DISTRIBUTION  
OF FRAGMENTS  
(60 FT. RADIUS)

ABERDEEN PROVING GROUND, MD  
OCT. 27, 1944  
APG 11876-14 PR

FIRING RECORD NO. B-11822  
INCLOSURE 3

ROUND NO. 13

8 October 1952

SHELL, HE, 122mm, Soviet  
MODEL, CP -462, Ammonium Nitrate 80% - TNT 20%

SHELL MARKINGS

OVERSE

SI  
287-45  
122  
-----

REVERSE

AT/CO  
[ ]  
02 - 462

BASE

78  
51 45

Ⓒ

Shell has one split rotating band.

Weight of Shell w/o Components- 45.64 lbs.  
As Fired - 45.76 lbs.

Distance from Shell to center of the 0.020" duralumin flash target- 22.67 ft.

Shell before firing is shown in APG Photograph No. A78157.

Recovered fragments with their respective weights and velocities are shown in APG Photograph No. A97558.

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[REDACTED]

263



# FRAGMENT VELOCITY DATA

Test of Shell; H.E., 122mm, Soviet, AT/80

Side Velocity Box Data

Proof Director Mr. G. L. Rogers

Date Fired 8 Oct 1952

Distance from detonation point to target 221 80 feet. Round No. 13

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
1	N.R.		17	2	2974	33	3	
2	3	3424	18	15	3284	34	2	
3	N.R.		19	250	2828	35	N.R.	3181
4	1		20	61	2951	36	300	3181
5	2	3054	21	N.R.		37	2	
6	6	3214	22	45	3284	38	546	2679
7	28	3338	23	11	3284	39	61	2314
8	N.R.		24	9	3085	40	408	2237
9	N.R.	3085	25	13	3133	41	25	2644
10	04	2898	26	92	3133	42	2	2121
11	N.R.	3039	27	14	3133	43	5	
12	N.R.	3099	28	28	3133	44	134	2596
13	N.R.		29	14		45	N.R.	
14	N.R.		30	13	3085	46	N.R.	
15	N.R.	3039	31	83	3085	47	3	
16	N.R.		32	8	3133	48	27	

Average velocity 2968 ft/sec.

NV - no velocity recorded.

NR - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than  $\pm 3.6$  % for the highest velocity and  $\pm 3.0$  % for the lowest velocity.

Sheet 1 of 2

# FRAGMENT VELOCITY DATA

Test of Shell, H.E., 122mm, Soviet Side Velocity Box Data

Proof Director Mr. O. D. Rogers Date Fired 8 Oct 1952

Distance from detonation point to target 22' 8" feet. Round No. 13

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
49	N.R.		65	N.R.	3133			
50	7		66	1	3133			
51	4		67	25				
52	572(2)		68	198				
53	3		69	186(2)				
54	N.R.		70	58				
55	N.R.		71	680	2951			
56	18	2453	72	28				
57	61		73	151				
58	6	2243	74	311				
59	N.R.		75	14				
60	N.R.		76	15				
61	N.R.		77	N.R.				
62	943(2)	3039	78	N.R.				
63	21(2)	3039	79	455(2)				
64	N.R.							

Average velocity 2968 ft/sec.

NV - no velocity recorded.

NR - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than + 3.6 % for the highest velocity and + 3.0 % for the lowest velocity.

Sheet 2 of 2

CONFIDENTIAL

# PENETRATIONS SHELLS IN PANELS

LOT NUMBER  
FIRING NUMBER

DATE 8 Oct 52

PROPERTY NUMBER

XXXXXXXXXX Sheet 1 of 12

XXXXXXXXXX Round No. 13

ROCKET NUMBER

PENETRATIONS OF 122mm, OR-482 LOADED AT/80  
Soviet

IN PANELS WITH LENGTH OF 30' AND FEET

PANEL NUMBERS	PENETRATIONS		PENETRATIONS			PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
2.5			10	8	2	Total					1
			1	1	1						
Total					2	9			4	3	5
									3	3	2
3.1			2	2	6				1	1	1
			3	2	3	Total					3
			1	1	1						
			2	2	1	10			1	1	1
Total					4	Total					1
3.2			1	1	1	12			3	2	2
			1	1	2				1	1	1
Total					2				3	2	2
						Total					3
4.2			2	2	10						
			1	1	2	13	4	3			
			2	2	7	Total		1			
Total					3						
4.5			2	2	4	14			3	2	2
			2	2	1	Total					1
			1	1	1						
Total					3	15			5	2	8
						Total					1
5.4			8	2	4						
Total					1	17			5	2	6
									4	3	1
						Total					2
6.3			3	1	3						
Total					1	20	3	2			
						Total		1			
6.4			4	1	4						
Total					1	22			3	2	10
7			3	3	1	Total					1

# PENETRATIONS SHELLS IN PANELS

LOT NUMBER

FIRING POSITION NUMBER

PRIORITY NUMBER

DATE Oct 52

PENETRATIONS OF SHELL 122mm, OF-403, LAUNCHER 41/60

Soviet

XXXXXXXXX Sheet 2 of 12

XXXXXXXXX Round No. 13

IN PANELS WITH PERIOD OF 30' AND FEET

PANEL NUMBERS	PENETRATIONS		PENETRATIONS			PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
23	4	3	4	2	1	23 cont			1	1	2
	4	2	2	2	2				1	1	1
			2	1	4	Total					4
			1	1	1						
Total		2			4	24	3	3	1	1	4
							3	3	2	1	2
24	7	2	4	2	6		9	8	2	1	2
			2	1	5		3	2	1	1	4
Total		1			2				1	1	1
						Total		4			5
25	5	3	2	2	6						
	12	5	1	1	2	30	4	3	3	1	4
	4	4	4	2	3		16	7	3	2	4
	5	3	2	1	1		3	2	1	1	2
Total		4			4				3	1	1
									1	1	2
26	8	4	1	1	2				1	1	1
	22	8	1	1	1				1	1	2
	5	2	2	1	1	Total		3			7
	9	4	2	1	6						
	9	6	1	1	4	31	5	5	2	2	6
	4	4	1	1	3		16	9	4	2	3
	16	5					4	3	1	1	2
Total		7			6		4	3	4	1	4
							7	7	2	2	5
27	36	12	3	2	5		4	3	4	1	4
	3	3	1	1	1		4	3			
	8	5	2	1	1		5	3			
	4	2	3	1	2		4	3			
			1	1	2	Total		9			6
Total		4			5						
						32	12	5	2	1	1
28			3	1	2		32	8	2	2	6
			4	2	8		16	8	1	1	1

# PENETRATION SHELLS IN PANELS

LOT NUMBER

DATE 8 Oct 52

FIRING NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, OP-462 AT/60  
Soviet

XXXXXXX Sheet 3 of 12

XXXXXXX Round No. 13

IN PANELS WITH FRONT OF 301 AND FEET

ADDITIONAL

PANEL NUMBERS	PENETRATIONS		PENETRATIONS			PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
32 cont	14	8	3	1	2	34 cont	30	8	2	2	2
	4	4	1	1	2		8	5	3	2	3
	9	4	4	2	2		12	12	5	1	5
	11	3	4	1	4		8	6	1	1	1
			2	1	5		6	4	2	2	3
			2	2	2		10	4	1	1	3
			1	1	1		12	4	4	1	3
			4	1	3		20	8			
			2	1	2		8	8			
			3	2	8		24	12			
			1	1	1		28	8			
Total		7			14		8	4			
							4	3			
33	48	16	2	2	5	Total		16			10
	5	4	4	1	10						
	12	8	3	2	3	35	7	4	4	2	2
	20	6	5	2	4		6	4	1	1	1
	8	3	1	1	2		25	9	1	1	1
	12	4	3	2	6		5	2	5	3	7
	4	3	2	1	2		20	9	4	1	1
	5	4	2	1	2		7	4	2	1	1
	20	18	1	1	2		8	4	2	1	2
	6	3	1	1	1		11	7	3	2	3
	12	6	2	1	2				4	2	2
	14	6	2	1	1	Total		8			9
	20	4	3	1	2						
	5	4	5	2	4	36	8	4	2	1	1
	52	8	4	2	6		7	3	1	1	1
	28	8					11	7	1	1	1
Total		16			15		12	6	7	1	2
							13	10	4	3	5
34	8	6	3	1	2		8	5	2	2	2
	7	3	3	1	2		11	4	4	3	7
	8	2	2	1	1		19	8	1	1	1

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# PENETRATION SHELLS IN PANELS

LOT NUMBER  
FIRING NUMBER

DATE 8 Oct 52

PRIORITY NUMBER

PENETRATION OF 122mm, OF-462 LOADED AT/80  
Soviet  
IN PANELS WITH NOTCH OF 30" AND FEET

XXXXXX Sheet 4 of 12  
XXXXXX Round No. 13  
SOCKET NUMBER

PANEL NUMBER	PENETRATIONS		PENETRATIONS			PANEL NUMBER	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
30 cont	0	4	2	2	9	41			2	1	3
	4	3	1	1	1				1	1	2
	10	8	6	2	6				1	1	1
	37	11	4	2	3				3	1	1
	12	6				Total					4
	22	16									
	20	12				42	20	7			
	20	16				Total		1			
Total		16			12						
37	7	5	3	2	2	43	14	8			
	2	2	1	1	4		4	3			
	6	4	4	3	4	Total		2			
	7	2	2	1	1						
	3	3	1	1	1	44			3	1	1
			1	1	1				2	1	1
Total		5			6				1	1	3
						Total					3
38	6	2	1	1	2	45	6	4	2	1	3
	16	4	1	1	1		7	3			
	10	5	2	2	3	Total		2			1
	10	3									
Total		4			3	46	4	2	4	3	5
							6	3	1	1	1
39	6	2	1	1	2				2	1	2
	2	2	4	4	7				4	2	3
			1	1	1	Total		2			4
Total		2			3						
						47			2	1	2
40			4	3	2				3	1	3
			1	1	1				1	1	1
			2	2	4				1	1	1
			1	1	1	Total					4
Total											

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[REDACTED]

PENETRATION:

SHELLS IN PANELS

FOR NOVA

FIRING # NUMBER

PRIORITY ORDER

001: 8 058 7

PENETRATION OF SHELL 122mm OF-462 LOADED AT/80

Soviet

Sheet 5 of 12

Round No. 13

IN PANEL AND PANEL OF 301 AND FEET

PANEL NUMBER	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
48	3	3	8	2	2
	8	8	1	1	2
			1	1	2
			2	1	1
Total		2			4
49	7	3	1	1	2
	8	6	1	1	1
			4	2	2
			2	1	2
			4	3	3
			2	1	1
			2	2	1
			1	1	2
Total		2			8
50			1	1	2
			2	1	2
			2	1	1
			2	1	1
			2	2	1
			3	1	1
			1	1	2
			2	1	2
			3	2	3
Total					9
51	8	6	2	1	2
			3	1	1
			2	1	1
			3	2	9
			2	2	3
			1	1	1
			2	1	1

PANEL NUMBER	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
51 cont			2	1	3
			2	1	1
			3	2	1
Total		1			10
52	12	7	2	1	2
			1	1	1
			4	1	3
			1	1	2
			2	2	1
			3	3	3
			4	2	8
Total		1			7
54	10	6	2	1	2
			2	1	4
			1	1	1
			2	1	2
			1	1	1
Total		1			5
55			1	1	1
			2	1	2
Total					2
56			1	1	1
Total					1
57			4	2	5
			3	3	3
			1	1	1
			4	2	2
Total					4

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PENETRATIONS SHELLS IN PANELS

LOT NUMBER DATE 6 OCT 62

PRIORITY NUMBER

PRIORITY NUMBER

PENETRATIONS SHELL 122mm, OF-492 LOADED AT/80

XXXXXXXXXX Sheet 6 of 12

XXXXXXXXXX Round No. 13

IN PANELS WITH HAD 1 OF 301 AND Feet

PANEL NUMBER	PENETRATIONS					PANEL NUMBER	PENETRATIONS				
	LENGTH	WIDTH	DEPTH	AREA	DEPTH		LENGTH	WIDTH	DEPTH	AREA	DEPTH
58.2	8	7	1	1	1	60.3	4	3			
			1	1	1	Total		3			1
Total		1			2						
58.3			2	1	1	60.4	13	6	1	1	1
			1	1	1	Total		1			1
Total					2	60.6	8	3	3	1	3
						Total		1			1
58.4			1	1	2	61.1	11	5	3	2	3
			2	2	2				3	2	7
			2	1	3	Total		1			2
Total					5	61.3	13	12	1	1	1
58.5	7	7	3	2	2		7	4	4	3	7
	7	4					7	3			
Total		2			1		4	2			
58.1	7	7	2	1	2	Total		4			2
Total		1			1	61.4	3	3	2	2	1
58.3	7	4	5	2	8		4	4	2	1	1
	13	11					4	4	2	1	7
Total		2			1	Total		3			4
58.6	7	5				61.5	12	12	2	1	1
	10	5				Total		1			1
Total		2				61.6	3	3	3	2	3
60.1	10	8	2	2	4	Total		1			1
			3	2	4	62.1			2	1	3
Total		1			2	Total					1
60.3	12	7	3	3	2						
	5	3									

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PENETRATIONS SHELLS IN PANELS

LOT NUMBER

FIRING NUMBER

DATE 6 Oct 52

PRIORITY NUMBER

Round No. 13

Sheet 7 of 12

PACKED

PENETRATIONS OF SHELL 122mm, OF-452 LOADED AT/89

Soviet

IN PANELS WITH PLOT OF

301

AND

FREE

PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
62.2	10	3	3	2	6
	15	1	3	1	4
	15	7	3	2	7
	5	2			
	4	3			
Total		5			3
62.3	6	4	1	1	3
	4	3	3	2	3
			2	1	3
			3	2	4
			4	2	3
		2			5
	5	3	3	2	7
	8	3	3	2	3
	4	3	3	2	5
			1	1	1
			1	1	2
Total		3			5
62.5	4	4	3	2	3
			2	1	1
			2	1	2
Total		1			3
62.6	6	3	10	3	4
	10	7	2	1	4
			3	1	3
			3	3	1
Total		2			4
63.1	6	4	2	1	5
			2	1	2

PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
cont			2	1	5
63.1			2	2	8
Total		1			4
63.2	6	4	2	2	6
	12	7	2	2	6
	6	3	1	1	2
	3	3	2	2	7
	8	5	2	1	2
Total		5			5
63.3	14	7	3	2	4
	12	7	3	3	4
	7	6	2	1	6
	20	16	2	1	7
	8	5	2	2	4
	3	3	2	1	2
	4	3			
	4	3			
	4	3			
Total		9			6
63.4	16	8	2	1	2
	12	9	1	1	3
	20	16			
	12	12			
	4	3			
	4	3			
Total		6			2
63.5	8	6	2	1	3
	8	5			
Total		2			1

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PENETRATION. SHELLS IN PANELS

1992

1949 8 Oct 52

1981 5 10 1983 8

COPIES TO: 100-443602

Sheet 8 of 12

XXXXXX-73 Round No. 13

5252 J. Neurosci., July 26, 2006 • 26(30):5247–5252

REGISTRATION OF 5-FLU 122mm. OF-462 LOADED AT/80

Soviet


301

450

f f i

PANEL NUMBER	PENETRATIONS		PENETRATIONS		PENETRATIONS	
	LENGTH	WIDTH	LENGTH	WIDTH	LENGTH	WIDTH
53.6	9	8				
Total		1				
TOTALS						
30' Panel	188		279			

**CONFIDENTIAL**



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# PENETRATION OF SHELLS IN PANELS

LOT NUMBER  
FIRING NUMBER  
PRIORITY NUMBER

DATE 8 Oct 67

PENETRATIONS BY SHELL 122mm OP-492 LAUNCHED AT/80

XXXXXX Sheet 9 of 12

XXXXXX Round No. 13

IN PANELS WITH RADIUS OF

60'

AND

FLEET

ROCKET NUMBER

PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
17			3	2	1
Total					1
20			8	2	2
Total					1
23			2	2	1
Total					1
24	7	3			
Total		1			
25			12	4	9
			4	4	8
Total					2
26	8	4			
Total		1			
27	5	4			
	6	4			
Total		2			
28			3	1	2
Total					1
29	8	4	2	1	2
	12	8	4	1	1
Total		2			2
30			6	5	4
Total					1

PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
31	4	3	8	2	8
	16	12			
	8	8			
	4	3			
Total		4			1
32	4	3	3	1	3
	3	3	4	2	3
	8	7	5	1	4
	7	3			
	6	4			
Total		5			3
33	4	4	2	1	1
	44	12			
	7	8			
Total		3			1
34	40	8	5	2	2
	10	6	3	2	9
	16	3	3	1	1
	14	9	5	2	3
	5	5	1	1	1
	20	8	2	1	1
	15	8	2	1	2
	3	3	3	2	5
	12	8			
	7	4			
Total		10			8

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# PENETRATION OF SHELLS IN PANELS

AT NUMBER

DATE OCT 50

STATION NO NUMBER

PRIORITY NUMBER

PENETRATION OF SHELL 122 GP-402 LOAD AT/80

XXXXXXXXXX Sheet 10 of 12

XXXXXXXXXX Round No. 13

ROCKET NUMBER

PANEL NUMBERS	PENETRATIONS		PENETRATIONS			PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
35	4	3	12	4	2	46			3	2	1
	16	3	5	3	8	Total					1
	13	7	3	2	4						
	8	4	4	3	3	48			4	2	3
	32	10				Total					1
Total		5			4						
	8	7	12	4	2	49	8	6			
	30	6	12	2	2	Total		1			
	9	5	4	2	1						
	29	9	6	5	4	50	8	4	1	1	1
	17	13							3	3	2
	32	9				Total		1			2
Total		6			4						
						53			8	3	2
						Total					1
37			4	2	2						
Total					1						
						54	7	4	2	1	1
38			22	2	4		8	7	3	2	3
Total					1	Total		2			2
39	6	5				55			1	1	1
Total		1							2	2	1
						Total					2
41			10	4	2						
Total					1	56			2	1	1
									1	1	1
						Total					2
43	8	5	3	2	2						
	7	4				57	9	7			
Total		2			1		4	2			
						Total		2			
44	22	6									
	12	7									
Total		2									

PENETRATIONS

SHELLS IN PANELS

LOT NUMBER

DATE 8 Oct 52

FILE NO. 4

PENETRATIONS

PENETRATIONS OF SHELL 1 in, QM-462 LOADED AT/80

XXXXXX X Sheet 11 of 12

XXXXXX M Round No. 13

IN PANELS WITH PENETRATIONS

60

AND

FILE

XXXXXX X

PANEL NUMBER	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
58.2	8	8	1	1	1
	5	5			
Total		2			1
59.1	7	5	2	2	1
Total		1			1
60.1	8	7	2	2	1
	7	3	3	2	1
	5	3			
Total		3			2
60.2	12	9	3	2	4
	8	5			
	5	5			
Total		3			1
60.3	10	8			
Total		1			
61.1	6	4	1	1	1
	5	4			
Total		2			1
61.2	12	10	2	1	1
	5	4	3	2	1
			2	2	1
Total		2			3
61.3	8	7	3	3	2
			4	2	1
			4	2	1
Total		1			3

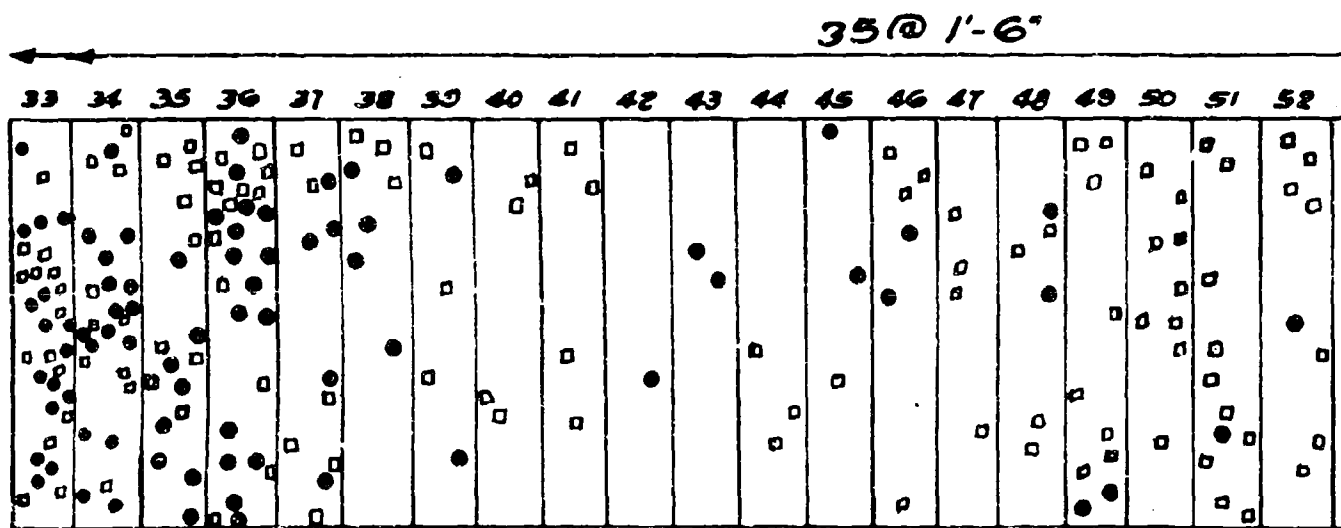
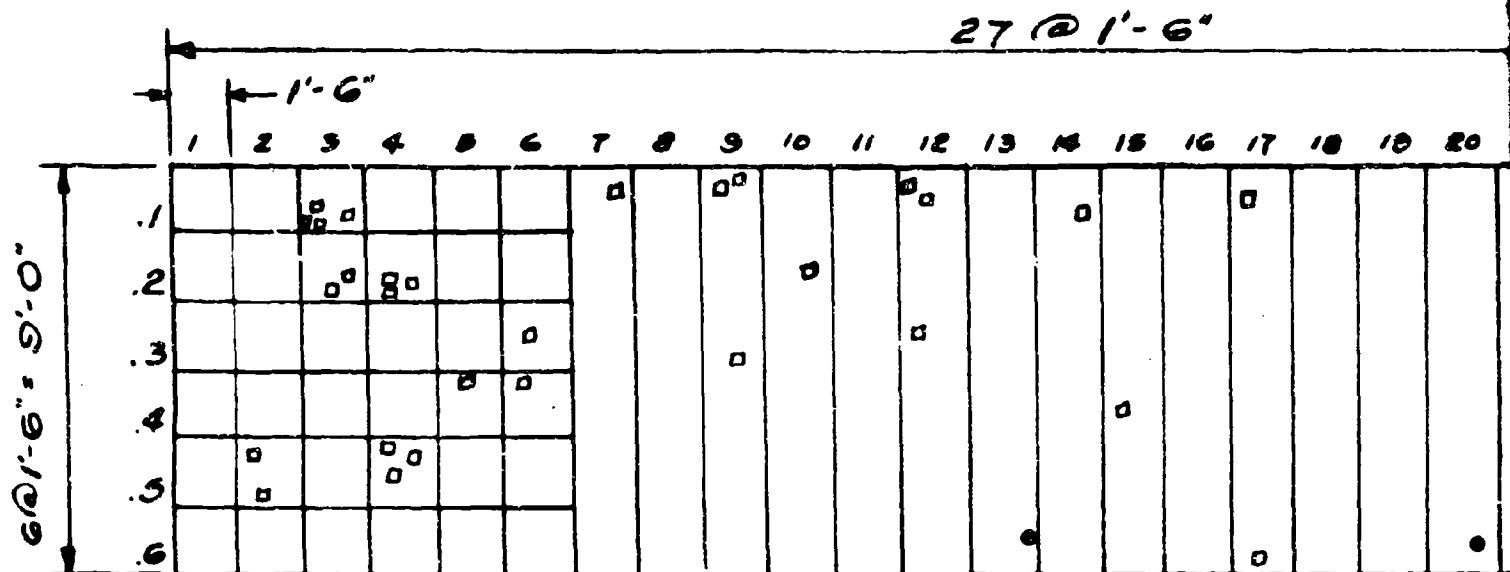
PANEL NUMBER	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
62.1	9	5	6	3	5
Total		1			1
62.2	6	6	3	2	2
	4	3	7	3	2
	10	5	2	2	1
	5	4	3	2	2
	10	10			
	7	5			
Total		6			4
62.3	7	4			
	8	6			
Total		2			
63.1	5	4	9	4	3
	7	4	3	2	2
	4	3	2	1	1
	9	4	5	2	2
	7	4	5	5	3
	10	7			
	8	7			
	4	2			
Total		8			5
63.2	8	6	7	7	3
	8	4	2	1	1
	7	7	3	2	2
	5	4	4	3	2
	5	4	1	1	1
	6	4	16	12	2
	4	2	1	1	1
	8	7	5	3	2
	4	3	2	1	1

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1

# PANEL A

30 FT RADIUS 180° AR



1" NO. 3 PINE BOARDS (DRESSED) PLACED VERT

SHELL - 122 MM, O Ø 462, SOVIET

DATE FIRED - 8 OCTOBER 52

POSITION - HORIZONTAL

RD. NO. 13

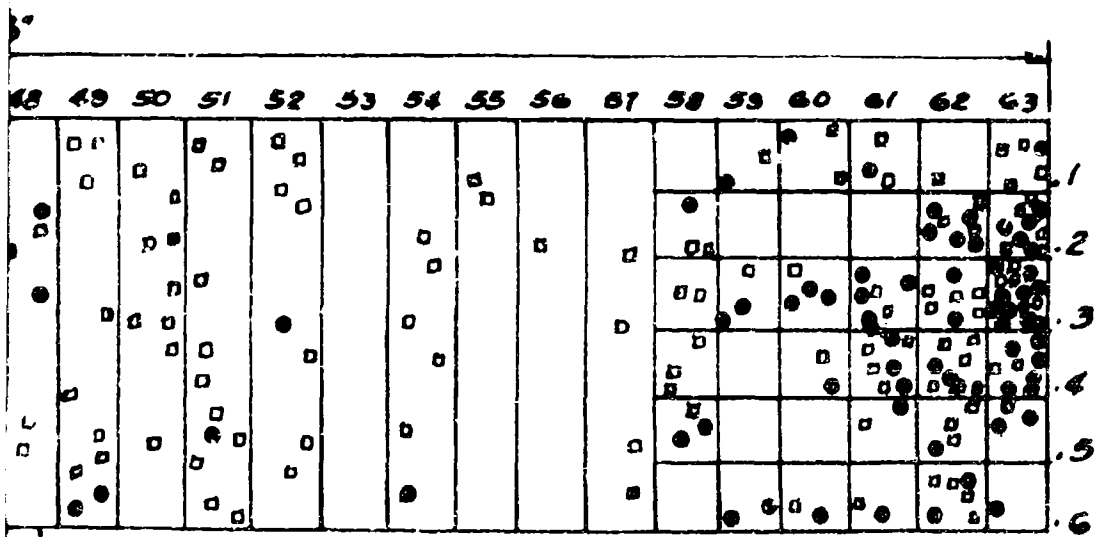
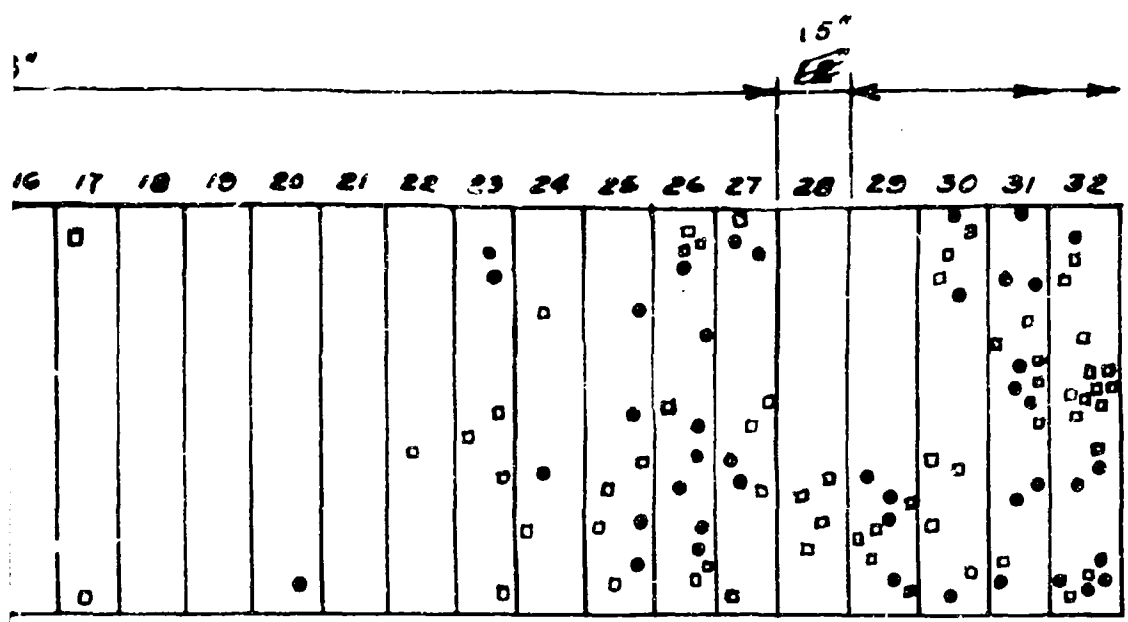
○ PERFORATIONS - 1

□ PENETRATIONS - 2

621777

A

5 180° ARC



2

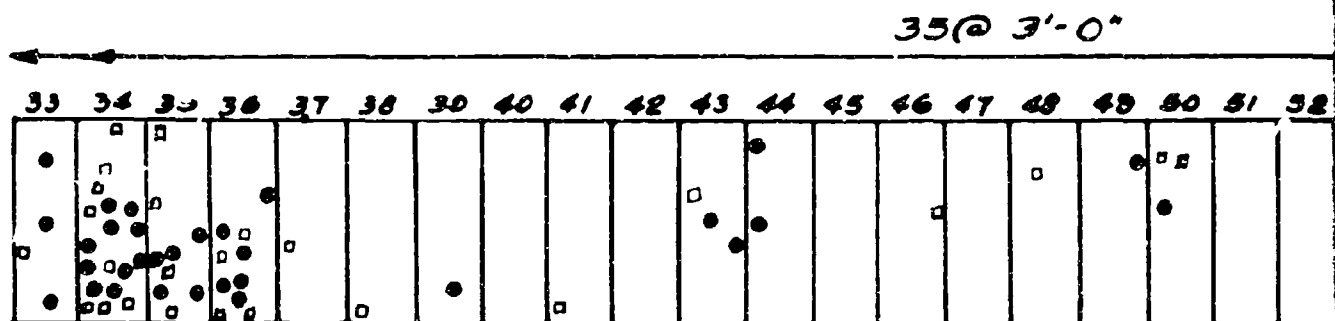
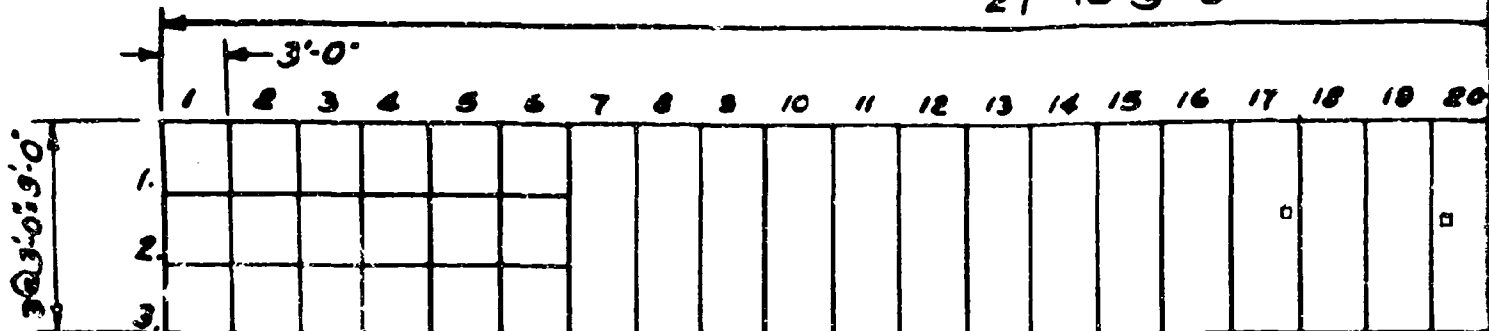
PLACED VERTICALLY.

PERFORATIONS - 185  
PENETRATIONS - 279

RANGE OPERATIONS SECTION	
LAYOUT OF PANELS FOR NUMBER AND DISTRIBUTION OF FRAGMENTS (30 FT. RADIUS)	
ABERDEEN PROVING GROUND MD. OCT 27, 1944	
APG 11876-15 PR	

217A

PANEL B  
60 FT. RADIUS 180° AR  
27 @ 3'-0"



1

1" NO. 3 PINE BOARDS (DRESSED) PLACED VEA

SHELL - 122 MM, Ø462, SOVIET  
DATE FIRED - 8 OCTOBER 52  
POSITION - HORIZONTAL

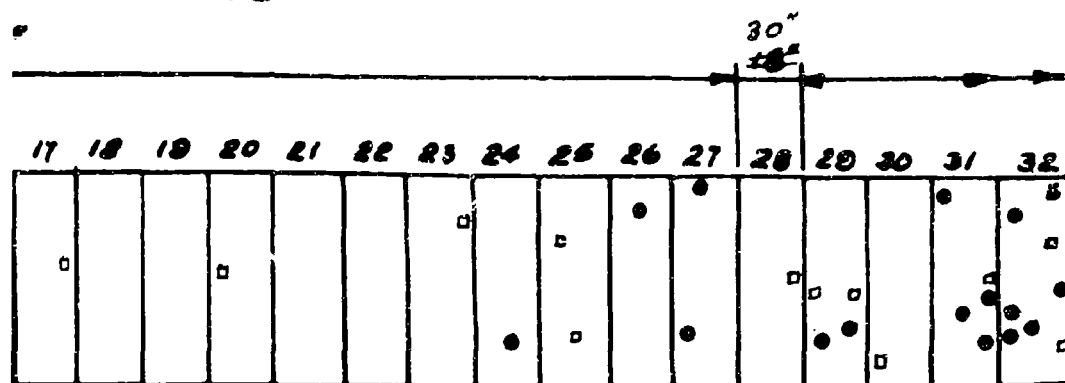
RD. NO. 13

● PERFORATION  
□ PENETRATIO

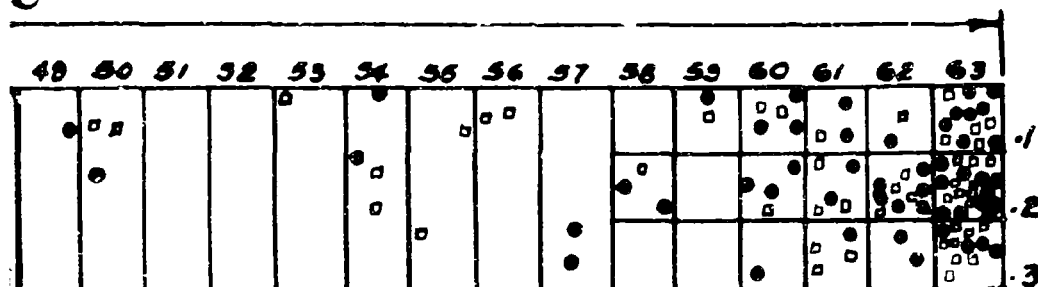


3

180° ARC



0"



2

ACED VERTICALLY.

PERFORATIONS - 97  
 PENETRATIONS - 84

# RANGE OPERATIONS SECTION

LAYOUT OF PANELS  
 FOR  
 NUMBER AND DISTRIBUTION  
 OF FRAGMENTS  
 (60 FT. RADIUS)

217B

ABERDEEN PROVING GROUND, MD.  
 OCT. 27, 1944  
 APG 11876-14 PR

PENETRATIONS: SHELLS IN PANELS

NOT RECORDED  
FEBRUARY 1968  
COLUMBIA UNIVERSITY LIBRARY

8 Oct 52

122mm, GP-400, 122mm AT/GO  
Soviet  
601 AND

XXXXXXXXXX Sheet 12 of 12  
XXXXXXXXXX Round No. 13

**SUBJECTS**

Panel Number	MISS-DEFLECTIONS		PENETRATIONS			Panel Number	REFRIGERATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
23.3	17	12									
	15	7									
Total		11			9						
23.3	4	4	4	3	1						
	9	3	4	4	2						
	3	3	29	10	7						
	11	9	5	2	2						
			4	5	2						
			2	2	2						
			2	2	1						
			3	3	2						
Total		4			8						
TOTALS											
601 Enclosure		97			84						

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# FRAGMENT VELOCITY DATA

Test of: Shell, HE, 122mm, Soviet, 40/80 Side Recovery Box Data

Proof Director: Mr. O. L. Rogers Date Fired: 30 June 1953

Distance from detonation point to target: 22.59 feet. Round No. 18

Rounds statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
1	204(2)	2725	17	N.R.		33	21	2320
2	N.R.		18	455	3035	34	232(2)	2304
3	4		19	238(3)	2986	35	5	2347
4	136	2301	20	153(2)	2033	36	9	2415
5	82		21	0+	3204	37	137(2)	2304
6	107		22	303(2)	3204	38	2	
7	N.R.	2769	23	2		39	0+	2330
8	1		24	2		40	90	2450
9	0+		25	0+		41	12	
10	133	3142	26	6		42	603	2525
11	7	2733	27	3	2918	43	22	
12	209	3142	28	9		44	35	
13	1743(4)	3204	29	15	2439	45	122	
14	2		30	618	2476	46	97(2)	
15	N.R.		31	3		47	156(2)	
16	1		32	1		48	369(3)	2301

Average velocity: 2751 ft/sec.

N - no velocity recorded.

NR - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than + 5.9 % for the highest velocity and - 3.3 % for the lowest velocity.

Sheet 1 of 2

CONFIDENTIAL

# FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet

Side Recovery Box Data

Proof Director Mr. O. L. Rogers

Date Fired 30 June 1953

Distance from detonation point to target 29.69 feet. Round No. 13

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
49	80							
50	2							
51	44							
52	H.R.	3033						
53	194	3083						
54	3	3083						
55	279							
56	3	2918						
57	312	2971						
58	219	2918						
59	0+	3026						
60	H.R.							
61	124	2918						
62	H.R.	2633						
63	3							
64	8	2415						

Average velocity 2751 ft/sec.

NV - no velocity recorded.

NR - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than + 3.9 % for the highest velocity and + 3.9 % for the lowest velocity.

Sheet 17 of 27

**CONFIDENTIAL**

ORDERED BY: FEB 48  
FORMALITY: 10077-2291

# PENETRATION. SHELLS IN PANELS

LOT NUMBER

DATE: 20 June 60

FIREARM NUMBER

PROJECT NUMBER

DESIGNATIONS OF PANELS: OP-452 (LOADS 47/80)

SHEET 1 of 8

ROUND No. 18

IN PANELS WITH RECORD OF

30"

AND

FEET

PANEL NUMBER	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
1.4			2	1	1
Total					1
2.5			2	1	1
Total					1
3.2			6	3	2
Total					1
5.4			8	3	2
Total					1
6.1			9	3	2
Total					1
6.3			5	3	2
Total					1
7			6	2	7
Total			1	1	1
					2
8			2	1	1
Total					1
10			16	6	5
Total					1
11			2	1	1
Total			1	1	1
					2
12			2	1	1
Total			2	2	1

PANEL NUMBER	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
13			1	1	1
Total					1
14			1	1	1
Total					1
15	5	3			
Total		1			
17			1	1	2
Total			1	1	2
			2	1	1
Total					3
18			2	2	1
Total			3	1	2
					2
21			3	2	3
Total					1
22			3	2	4
Total			1	1	1
					2
23			1	1	1
Total			1	1	1
					2
24			1	1	1
Total			2	1	2
			4	2	3
Total					3

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PENETRATIONS SHELLS IN PANELS

LOT NUMBER  
FIRING NUMBER

DATE 30

PRIORITY 288P

Sheet 2 of 8

Round No. 18

POCKET NUMBER

PENETRATIONS OF SHELL 120mm, OF-408 LOADED AT/80

Soviet

IN PANELS WITH PENETRATION OF 501 AND FEET

PANEL NUMBERS	PENETRATIONS		PENETRATIONS			PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
25			3	2	8	30	12	6	3	2	2
			2	2	2				3	2	2
			1	1	1				4	2	1
Total					3				1	1	1
									1	1	1
26	13	5	1	1	1				2	1	2
	6	4	1	1	1	Total		1			6
	7	5	1	1	1						
			1	1	1	31	38	6	3	2	4
			2	2	4		9	5	1	1	1
Total		3			5		8	6			
						Total		3			2
27	4	3	1	1	5	32	18	8	2	1	2
	30	7	3	2	3		20	8	2	1	1
			4	3	5		16	8	5	2	4
			1	1	1		28	12	3	2	6
Total		2			4		5	4	3	2	4
									1	1	2
28	20	2	3	1	4	Total		5			6
	6	4	1	1	1						
	30	10	3	2	2	33	3	2	3	3	6
	38	8					60	6	3	2	6
	8	5					6	5	2	2	2
Total		5			3		15	8	4	1	1
							6	2	6	3	6
							9	3	1	1	1
	21	6	2	1	1		5	4			
			3	2	2	Total		7			6
			2	2	1						
			2	1	3	34	11	6	5	3	7
			3	2	3		5	3	2	2	1
			6	3	4		50	11	3	2	2
Total		1			6		11	4	4	2	2

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### PENETRATIONS & SHELLS IN PANELS

15. 1995

$$\Delta \mu \approx \frac{1}{2} \Delta \mu_0$$

04-50 June 5.

PENETRATIONS OF SHELL 122mm, 95-132mm LOADED 87/60  
 Soviet  
 IN PANELS WITH RASCH OF SOB AND

Sheet 3 of 8.

Round No. 13

IN PANELS WITH PART OF	SOI	AGE	FEET
SOVIET			

PANEL NUMBER	DIMENSIONS					PANEL NUMBER	DIMENSIONS				
	LENGTH	WIDTH	DEPTH	HEIGHT	WEIGHT		LENGTH	WIDTH	DEPTH	HEIGHT	WEIGHT
	20	8	1	1	1			6			7
	9	3	2	1	2						
	14	10	3	2	4	37	6	4	1	1	1
	24	9	2	2	3				3	1	1
	8	4	4	3	4				3	2	4
	4	3	3	2	6				4	1	1
	7	3	1	1	1				6	4	8
	16	12							6	2	2
	28	12				Total		1			6
	4	4									
	16	9				38	8	5	2	1	1
Total		15			11	Total		1			1
35	12	3	4	2	9	39	12	8	4	1	1
	16	8	2	2	5	Total		1			1
	64	9	3	2	4						
	7	5	1	1	1	40	16	9	2	2	3
	3	5	3	2	2		11	6			
	5	4	3	2	4	Total		2			1
	13	11	4	1	1						
	26	8	2	1	1	42	5	4	4	2	4
	32	11					9	6	2	2	2
	20	6					9	5			
	42	9					18	9			
	12	11					9	6			
Total		12			8	Total		5			2
36	6	4	2	2	1	43			3	2	4
	22	9	2	1	1	Total					1
	8	7	4	3	4	CONFIDENTIAL					
	20	6	2	2	2						
	6	4	2	2	1	44			8	3	7
	16	4	11	3	4	CONFIDENTIAL					
			9	3	4						
						Total					2



ORDAL 217 10 PER AT  
FORMERLY 87021-1237

# PENETRATION OF SHELLS IN PANELS

DATE 30 Jan 60  
SHEET 4 OF 8  
ROUND NO. 18

100mm, OF-400  
Soviet  
301

PANEL NO.	PENETRATION		PENETRATION			PANEL NO.	PENETRATION		PENETRATION		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
46			2	2	1	53			1	1	1
Total					1				2	1	1
									1	1	1
47	12	6	2	2	1	Total					3
			2	1	1						
			1	1	1	54			2	1	1
Total					3				2	1	1
						Total					2
48	6		3	3	1	55	4	4	2	1	1
Total		1			1	Total		1			1
49	10	7	2	2	1	56	4	3	1	1	1
			2	2	2		9	6	2	1	2
			2	1	1		7	5	4	3	7
			4	3	3		11	3	3	2	1
Total		1			5				2	1	1
						Total		4			5
50			2	2	1	57	5	2	1	1	2
			1	1	1		8	2	1	1	1
			4	3	4				1	1	1
			2	2	1	Total		2			3
			3	1	2						
			1	1	1	58.4			4	2	2
Total			1	1	1	Total					1
					7						
52	4	3	5	3	2	60.2	4	3			
			2	1	1	Total		1			
			2	1	1						
			2	1	1	60.3			4	3	2
Total		1							1	1	1
						Total					2

RECEIVED DECEMBER 1959

# PENETRATION OF SHELLS IN PANELS

LOT NUMBER

FIRING NUMBER

PRIORITY NUMBER

DATE 30 June 68

X-1000000X Sheet 5 of 8

X-1000000X Round No. 18

RECORD NUMBER

PENETRATION OF SHELL 122mm, OF-402 LOADED TNT

IN PANELS WITH 30' AND FEET

PANEL NUMBER	PENETRATIONS				
	LENGTH	WIDTH	DEPTH	DIAMETER	DEPTH
61.1	20	7			
Total		1			
61.2	13	8	2	2	3
Total		1			1
61.4	8	6	3	1	1
Total		1			1
61.5	4	10			
Total		1			
62.1	5	3	3	1	2
			3	3	1
			2		1
Total		1			3
62.2			1	1	2
Total					1
62.3	30	22	2	2	2
	8	3	3	2	4
			3	3	6
Total		2			5
62.4			2	1	5
			3	2	2
Total					2
62.5	8	4	2	2	3
	5	4	3	2	3
Total		2			2

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PANEL NUMBER	PENETRATIONS				
	LENGTH	WIDTH	DEPTH	DIAMETER	DEPTH
63.2	3	3	4	3	4
	14	9	1	1	1
Total		2			2
63.3	10	4	0	3	3
	28	6	3	3	5
			1	1	1
Total		2			3
63.4	26	8	5	2	3
	15	15	2	2	2
	19	9	1	1	1
	14	3			
	5	4			
	10	8			
	9	5			
	10	7			
	6	4			
	6	4			
Total		10			3
63.5	5	4	4	3	2
	32	16			
	4	3			
Total		3			1
63.6	9	5			
Total		1			
TOTALS					
30' RADIUS		110			170



PENETRATIONS

SHELLS IN PANELS

FOR THE USE OF THE 100TH B. OF 438. (S) AT/80

Section

COI

AND

FEEL

Sheet 7 of 8

Ground No. 18

PANEL NUMBER	PENETRATIONS		SHELLS IN PANELS			PANEL NUMBER	PENETRATIONS		SHELLS IN PANELS		
	DEPTH	ANGLE	LENGTH	WIDTH	THICK		DEPTH	ANGLE	LENGTH	WIDTH	THICK
34	10	7	4	2	4	43	6	5	2	1	1
	12	6	4	3	2				2	2	2
	20	8				Total		1			2
Total		3			2						
35	6	4	3	2	2	45	8	6			
	51	8	12	5	4	Total		1			
			3	3	2	47	10	6			
Total		2			3	Total		1			
36	8	6	2	2	1	46			1	1	1
	12	7	5	4	5				6	4	4
	12	3	2	2	1	Total					2
	13	11									
	12	8				51			1	1	1
	4	4				Total					1
	19	8									
	31	9				54			3	1	1
	26	14				Total					1
Total		9			3						
38	8	5	6	5	4	55			4	4	6
Total		1			1	Total					1
39	10	6				56			6	5	1
Total		1				Total					1
						59.1			5	4	3
40			4	3	4				2	2	2
Total					1	Total					2
41			1	1	1						
Total					1						

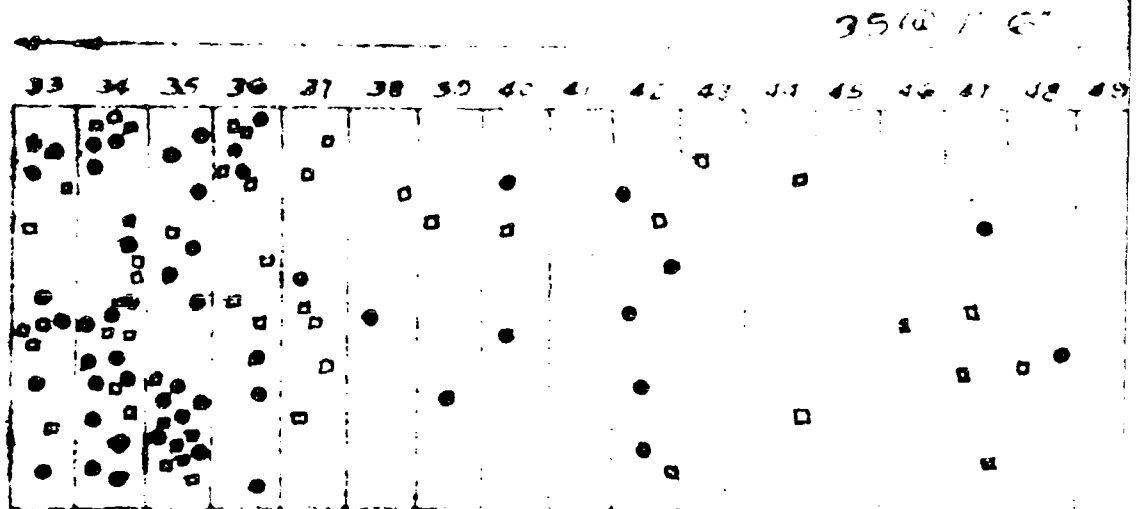
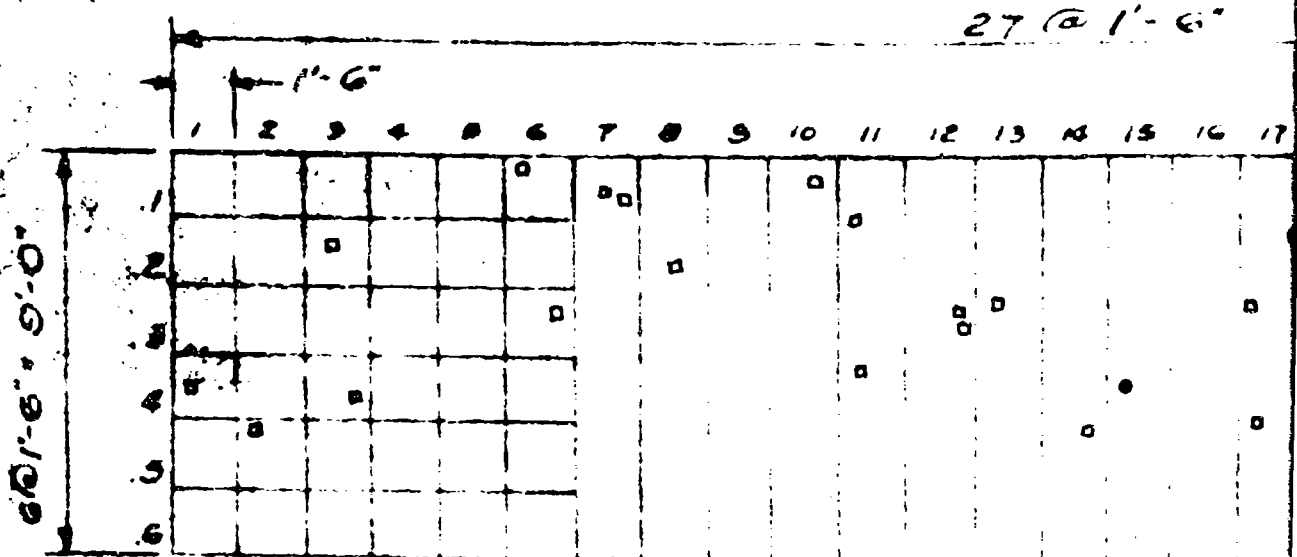
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E-11122

# CONFIDENTIAL PANEL A

30 FT RADIUS



1" NO. 3 PINE BOARDS (DRESSED) PLAC

DATE: 30 JUNE 53 RD. NO. 18

PERFORATIONS:

SHELL: 122 MM. SOVIET

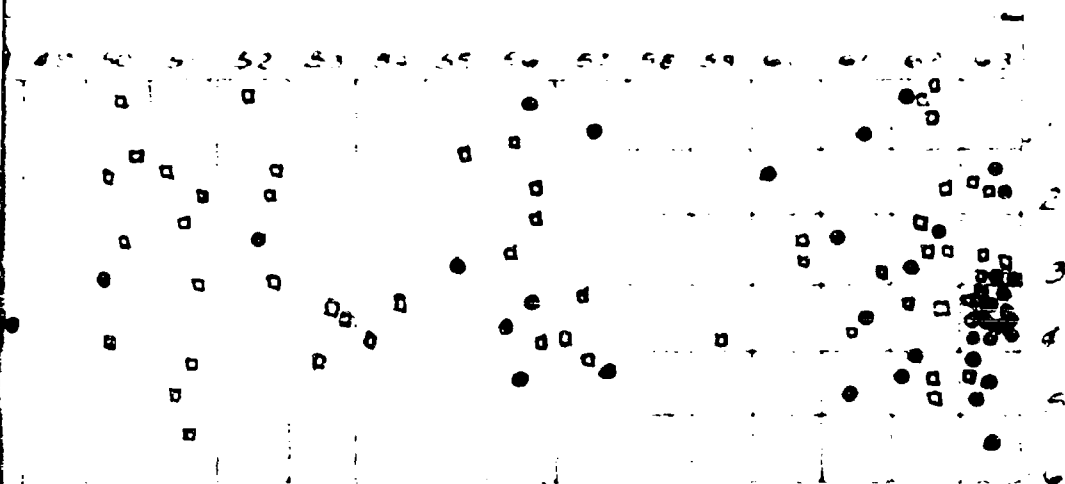
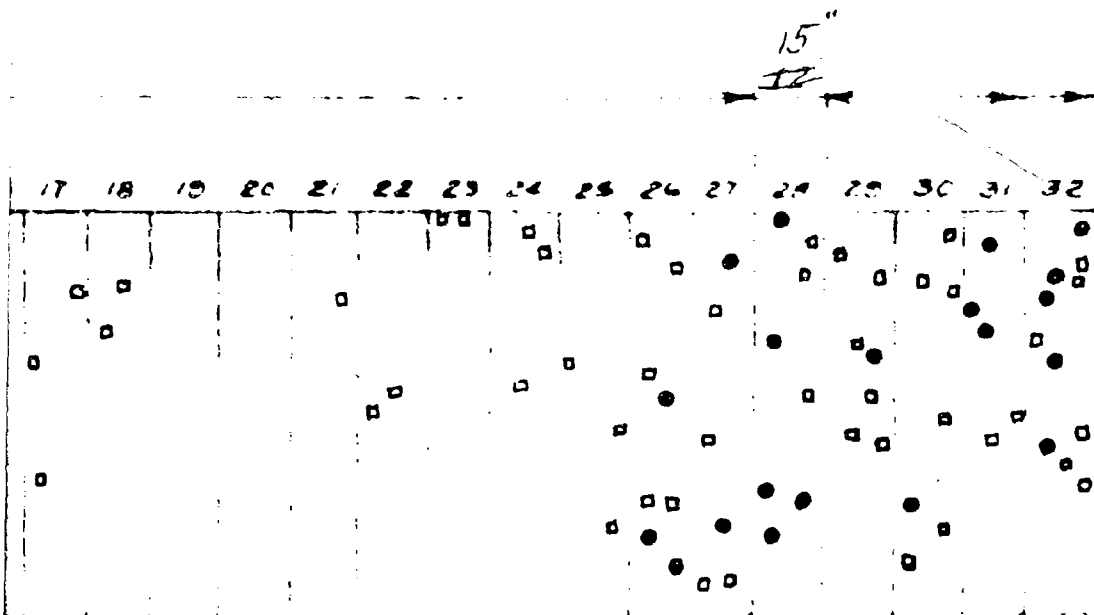
PENETRATIONS:

POSITION OF SHELL: HORIZONTAL

CONFIDENTIAL

A

180° ARC



2

ROAD VERTICALLY

NS: ● = 110

NS: □ = 170

AL

# RANGE OPERATIONS SECTION

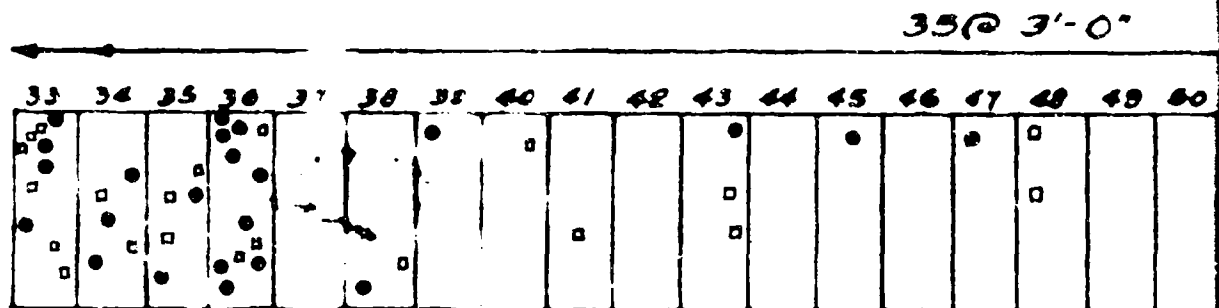
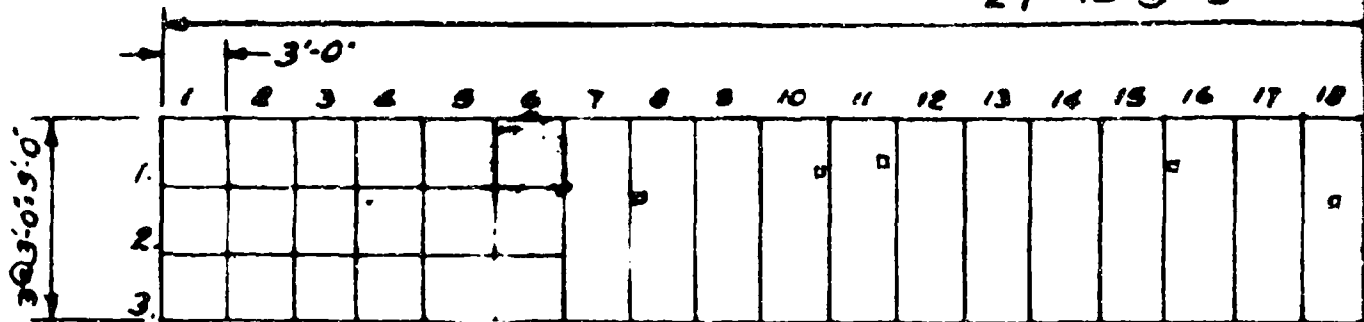
LAYOUT OF PANELS  
FOR

NUMBER AND DISTRIBUTION  
OF FRAGMENTS  
(30 FT RADIUS)

ABERDEEN PRACTICE GROUND MD  
OCT 27 1944

OPS 11876-15

PANEL B  
60 FT. RADIUS 180  
27 @ 3'-0"



1" NO. 3 PINE BOARDS (DRESSED) PLACED

DATE: 30 JUNE 53 RD. NO. 18

PERFORATIONS: ●

SHELL: 122 MM, SOVIET

PENETRATIONS: □

POSITION OF SHELL: HORIZONTAL

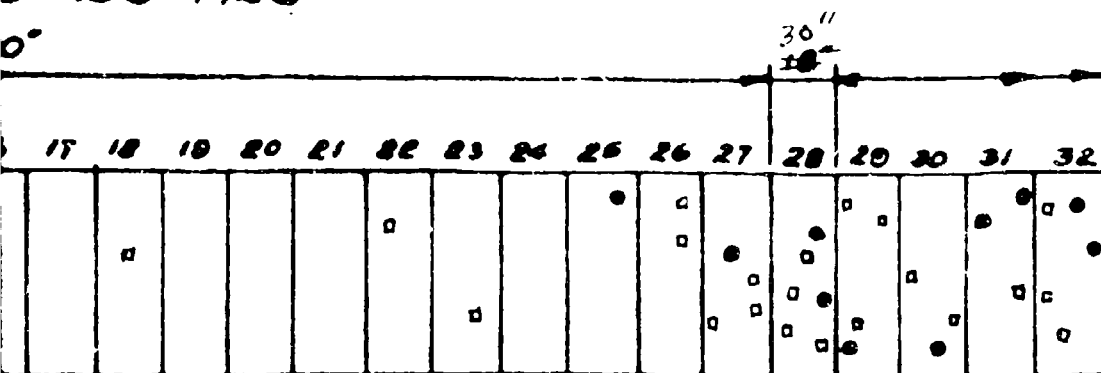
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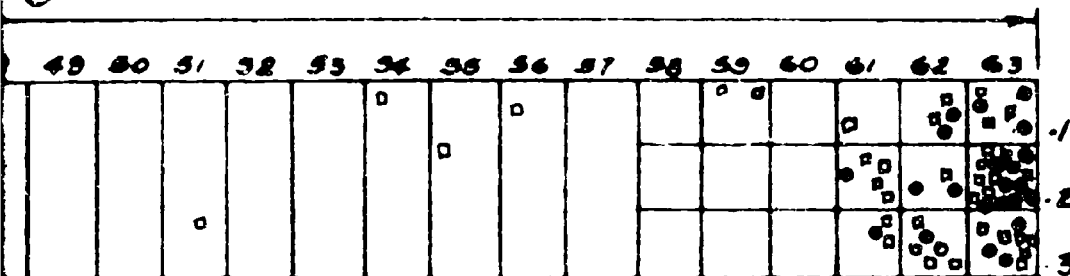
B

S 180° ARC

0°



0°



2

PLACED VERTICALLY.

• 55

□ 84

# RANGE OPERATIONS SECTION

LAYOUT OF PANELS  
FOR  
NUMBER AND DISTRIBUTION  
OF FRAGMENTS  
(60 FT. RADIUS)

ABERDEEN PROVING GROUND, MD  
OCT. 27, 1944  
APG 11876-14 PR

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e

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[REDACTED]

# FRAGMENT VELOCITY DATA

Shot of Shell, 122mm, Soviet, AT/SP Side Recovery Box Data

Recovery Director Mr. G. L. Rogers Date Fired 15 July 1965

Range from detonation point to target 22.73 feet. Round No. 19

Statistically determined and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
1	4	3202	17	N.R.		33	123	3400
2	14		18	N.R.		34	11	3460
3	0+		19	N.R.		35	151	3460
4	15(2)	2750	20	2		36	10	
5	N.R.		21	25	3250	37	16	2460
6	28	3065	22	0+	3065	38	N.R.	
7	2	3092	23	N.R.	3095	39	N.R.	2405
8	929(2)	3135	24	125	3155	40	N.R.	
9	171	2923	25	N.R.		41	3	
10	3	3107	26	6	3500	42	1220(3)	2384
11	13	2339	27	0+	3250	43	178	2535
12	245	3107	28	114	3155	44	2	
13	0+	2930	29	753	3155	45	117	
14	4		30	N.R.		46	3	
15	2		31	1	2899	47	50	
16	7	3065	32	2		48	339(2)	2701

Average velocity 3014 ft/sec.

NV - no velocity recorded.

NR - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than  $\pm 3.6\%$  for the highest velocity and  $\pm 3.1\%$  for the lowest velocity.

Sheet 22 of 23

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# FRAGMENT VELOCITY DATA

Shell, 122mm. Soviet Side Recovery Box Data

Director Mr. O. L. Rogers Date Fired 15 July 1956

Distance from detonation point to target 22.73 feet. Round No. 19

Round substantially detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
49	100		65	1		81	59	
50	22		66	3	3200	82	69	3527
51	2		67	3				
52	10		68	0+	3155			
53	447		69	10				
54	N.R.		70	N.R.				
55	8		71	1				
56	0+		72	23	2930			
57	N.R.		73	N.R.	3155			
58	2		74	3	2823			
59	21	3107	75	5				
60	47	2649	76	203	3315			
61	189(2)		77	N.R.				
62	N.R.	3202	78	5				
63	103(2)		79	N.R.				
64	516	3202	80	201				

Average velocity 3044 ft/sec.

N.R. - no velocity recorded.

N.R. - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Individual velocity inaccuracies are less than + 3.6 % for the highest velocity  
- 3.3 % for the lowest velocity. 2 2

Sheet 2 of 23

CONFIDENTIAL

# PENETRATIONS SHELLS IN PANELS

LOT NUMBER

STATION

NUMBER

DATE: 5 JUL 40

IRIS/NO. NUMBER

HYDRA-FLUX Sheet 1 of 9

HYDRA-FLUX Round No. 19

FLYER NUMBER

122mm, 00-462 LOADS AT/20

IN PANEL, 30' AND FEET

PANEL NUMBER	PENETRATIONS		PENETRATIONS			PANEL NUMBER	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
5.3			2	1	1	Total		1			
Total					1						
7			2	1	1	24	8	4	2	1	1
Total					1		16	6	2	2	1
6			6	4	4				3	1	1
Total					1	Total		2		4	5
10			3	2	6	25	4	3	3	2	9
Total					1		4	3	2	1	6
11			4	3	4				3	1	4
Total			1	1	1				1	1	7
12			2	1	1	Total		2		1	1
Total					1	26	4	3	4	2	2
17			1	1	4		13	5	2	1	1
Total					1		34	6	3	3	5
19			1	1	1		8	5			
Total			1	1	1	Total		4			3
21			1	1	1	27	19	4	4	3	3
Total					1		19	6	1	1	1
22			1	1	1		19	8	1	1	1
Total					1		28	10			
23	8	1				Total		4			3
						28			4	1	1
									2	1	1
						Total			3	1	1
						29	2	1	2	1	2

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# PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER  
FIRING  
FREQUENCY

DATE 15 MAY 59

PENETRATIONS OF SHELL 12mm. GP-452 LOADED AT/GO

Soviet

Sheet 2 of 9

Revised No. 19

IN PANELS WITH RADIUS OF 301 AND FEET

PANEL NUMBER	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	1	2
			7	2	2
Total	1				3
30	5	3	3	1	2
	9	7	1	1	1
			2	2	4
			3	1	6
Total	2				4
31	3	3	3	1	3
	8	3	2	1	1
	20	5	1	1	1
	22	8	3	1	3
			2	1	1
			3	2	7
Total	1				6
32	12	5	1	1	3
	3	2	3	3	2
	50	8	2	1	2
	20	7	4	2	6
	11	5	2	1	2
	4	3	4	1	4
	4	2	1	1	1
	10	4	2	1	8
	10	4	2	1	2
	34	4	3	1	5
	6	4	2	1	2
	4	3	6	3	9
	23	7			
	6	6			
	3	3			
	10	3			

PANEL NUMBER	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
32 cont	8	3			
Total		17			12
33	12	4	3	2	3
	12	6	1	1	3
	7	4	3	1	1
	14	4	1	1	1
	26	8	5	2	7
	4	3	1	1	1
	36	7	2	1	1
	18	8	3	2	8
	6	4	3	1	4
	8	3	6	3	5
	56	9			
	7	5			
	4	3			
Total		13			10
34	28	4	4	1	2
	15	4	2	1	2
	61	20	1	1	1
	24	9	4	1	2
	17	5	4	1	2
	15	3	5	4	4
	2	1	3	1	4
			1	1	3
Total		7			8
35	22	8	2	2	2
	22	9	4	1	2
	14	7	4	2	2
	14	5	3	2	2
	14	6	1	2	2
	58	8	3	3	3

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PENETRATION OF SHELLS IN PANELS

101 NUMBER

FIRING NUMBER

PRIORITY NUMBER

DATE 13 July 55

PENETRATION OF SHELL 122mm, OF-402 LOADED AT/80

SOVT 80

XUJACK V Sheet 3 of 9

SHOCKWAVE Round No. 19

IN PANELS IN CONTACT OF 301 AND FEET

PANEL NUMBER	PENETRATIONS		PENETRATIONS			PANEL NUMBER	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
35	24	13	2	2	3	43	12	10	2	2	2
	17	5	2	1	1		11	11	1	1	1
	3	2	1	1	2				3	2	5
	6	4	2	1	1	Total		2			3
	49	14	2	1	3						
	25	8	5	4	4	44	6	2	1	1	1
Total		12			12		5	3	5	3	3
							8	4	1	1	1
36	9	6	8	3	8	Total		3			3
	10	6									
	34	10				45	8	3	2	2	2
	16	5							1	1	1
	5	5				Total		1			2
	8	4									
Total		6			1	46			2	2	2
									4	3	3
37	11	5	5	1	4	Total					2
	14	8	3	2	1						
Total		2			2	47			5	2	3
									2	1	1
39	7	6							1	1	1
Total		1							2	1	1
									5	3	5
40	3	2	4	2	1				1	1	1
Total		1			1	Total					6
41			1	1	1	48			2	1	1
			1	1	2				1	1	1
			1	1	1	Total					2
Total					3						
						49			1	1	1
42		4							2	2	1
Total		1							2	2	6
									2	1	1

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# PENETRATIONS SHELLS IN PANELS

LOT NO. 1

FIRING NO.

NUMBER

DATE 13 July 1951

PRIORITY NUMBER

EXPLANATION

Sheet 4 of 9

EXPLANATION

Round No. 19

POCKET NUMBER

DE EXPANSION OF SHELL 122mm, ON-432 LOADED AT/00

Soviet

IN PANEL WITH CASE OF

301

AND

FEET

PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			3	2	3
			2	1	1
			1	1	1
			2	1	1
			1	1	1
Total					9
50	4	2	2	1	3
			1	1	1
			2	1	2
			2	1	3
			2	1	1
			1	1	7
			2	1	2
			1	1	1
			1	1	1
			1	1	1
			2	1	1
			2	1	1
			1	1	1
			2	2	1
Total		1			16
51	12	5	3	1	1
	9	5	2	1	1
	4	3	3	2	2
			1	1	1
			3	2	2
			3	2	2
			2	1	2
			1	1	1
			3	1	1

PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	1	1
			3	2	1
			2	2	2
Total		3			12
52	12	5	1	1	2
			1	1	1
			2	3	7
			2	1	1
			1	1	1
			1	1	1
			2	1	1
			2	1	1
			1	1	1
Total		1			9
53			2	1	1
			5	2	3
			1	1	1
			3	3	3
			3	3	5
			2	1	1
			2	1	2
Total					7
54			2	1	2
Total					1
55	4	3	2	1	1
			1	1	1
Total			1		2
56			2	1	1
Total					1



# PENETRATIONS OF SHELLS IN PANELS

101 MODEL  
FIREWORK NUMBER  
PRIORITY USER

07-05-00-50

DESCRIPTION OF SHELL 122mm, OF-462 LOADED AT/CO  
IN PANELS WITH RANGE BY 301 AND FEET

WATERMARK Sheet 5 of 9  
WATERMARK Round No. 19  
FIREWORK NUMBER

PANEL NUMBER	PENETRATIONS		PENETRATIONS			PANEL NUMBER	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
57			2	1	1				3	2	4
			2	1	1				4	4	6
			2	2	1	Total					4
			2	1	2						
Total					4	60.6	8	5			
							4	3			
58.1			2	1	1	Total		2			
			4	1	1						
Total					2	61.2	27	17	1	1	1
						Total		1			1
58.4			3	2	1						
Total					1	61.3		2	1	2	
						Total					1
58.5			2	1	1						
Total					1	61.4	3	2			
						Total		1			
58.7			1	1	1						
Total					1	61.5	5	3	3	2	6
							13	12	3	2	2
58.3			2	1	1				1	1	1
Total					1	Total		2			3
58.5			2	1	1	61.6	16	12			
			1	1	1	Total		1			
Total					2						
						62.2			1	1	1
60.1	4	4	1	1	1				1	1	1
	6	4	2	1	2	Total					2
	7	3	1	1	1						
	18	12				62.3	14	3	1	1	1
Total		4			3		3	2			
						Total					1
60.5			1	1	1						
			1	1	1	62.4					

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# PENETRATIONS & SHELLS IN PANELS

LOG NUMBER  
STRONG

Date 10 July 67

PROJECT NUMBER

Sheet 6 of 9

Round No. 13

Number of Shells 120, 10-402 LOADED 17/60

IN PANEL WITH SERIAL 301 AND FEET

PANEL NUMBER	DEPTH	W. IN	LENGTH	WIDTH	DEPTH
63.5		1			
63.5			5	2	7
			1	1	1
			2	2	6
			2	2	1
			1	1	1
Total					5
63.6	8	5	2	1	1
	12	3			
Total		2			1
63.1	20	20	2	2	2
			1	1	1
Total		1			2
63.2			1	1	1
Total					1
63.3	10	4	3	2	3
	18	14	5	4	8
	4	3	5	4	9
Total		3			3
63.4	16	16	4	3	4
	16	16	5	2	7
	4	3	3	2	4
	14	9	5	3	4
	3	3	3	3	5
	12	10			
	8	5			
	12	3			
Total		8			5

PANEL NUMBER	DEPTH	W. IN	LENGTH	WIDTH	DEPTH
63.5	14	7	3	1	1
	20	10	3	1	4
	5	3	1	1	1
	14	14			
Total		4			3
TOTALS					
301 Radius		124			216

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# PENETRATIONS OF SPELLS IN PANELS

LOT NO. 1  
 FIVE  
 REPAIR

W/15 Jan 70

12211, CU-462 19411 AM/CO

Sheet 7 of 9

Form No. 18

Soviet

CO

AM

FE

PANEL NUMBER	DATE	TIME	TYPE	REMARKS	STATUS
12			4	3	6
Total					1
13			3	2	2
Total					1
22			1	1	1
Total					1
24			2	2	3
Total					1
25			4	3	4
Total			4	3	3
Total					2
26	3	8	1	1	1
	7	4			
Total		2			1
27	22	5	1	1	1
	17	4	2	1	1
			1	1	1
			5	4	5
Total		2			4
28	10	8			
	22	5			
Total		2			
29			4	2	2
30					1

PANEL NUMBER	DATE	TIME	TYPE	REMARKS	STATUS
30	13	7			
Total	10	6			
Total		2			
31	8	4	2	2	4
	9	5	2	2	5
			3	2	1
Total		3		2	2
Total		2			4
32	16	5	1	1	1
	15	6	1	1	1
	15	5			
Total		3			2
33	6	5	3	2	2
	4	3	4	3	4
	16	4	1	1	1
	7	3			
Total		4			3
34	26	10			
	14	8			
	8	5			
Total	78	13			
Total		4			
35	11	11	1	1	1
	12	8	1	1	1
	18	7	3	3	2
	5	4	4	1	1
	15	4			
Total		5			4

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PENETRATIONS SHIELD III PANELS

USE FORM 10-1-43  
STRIKE NUMBER  
PRIORITY NUMBER

DATE 15 July 60

PENETRATIONS OF STEEL 122mm, OP-102, 10/60

Sheet 9 of 9  
Round No. 19

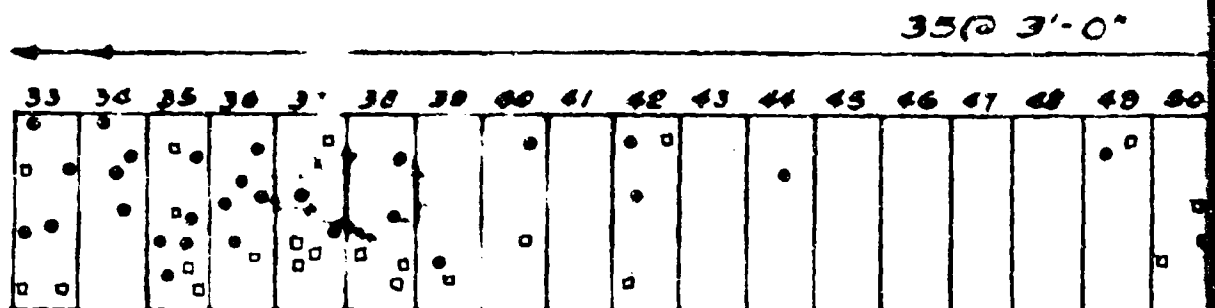
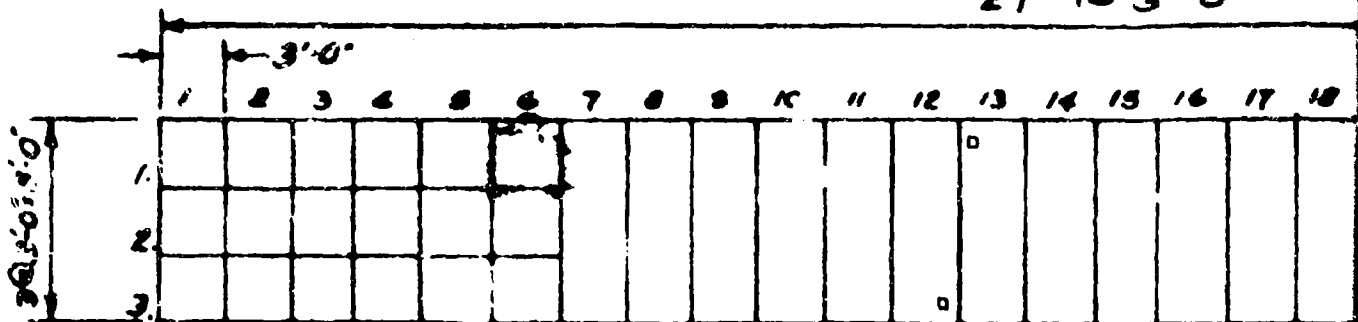
IN PANELS WITH RADII OF 60' AND FEET

Panel Number	PENETRATIONS		PENETRATIONS			Panel Number	PENETRATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
61.2	8	4	2	2	2	63.3	10	6	3	2	2
	18	7					13	6	3	2	2
Total		2			1		13	8	6	4	2
						Total		3			3
61.5	16	14	3	1	1						
Total		1			1						
61.1	16	12	2	1	1						
			2	1	1						
			3	2	1						
			9	2	2						
			6	4	4						
			2	1	2						
			5	3	2						
			1	1	1						
Total		1			8						
62.2			2	2	1						
			3	2	1						
			1	1	1						
Total					3						
62.3			1	1	1						
Total					1						
63.1			1	1	1						
			4	2	2						
			1	1	1						
Total					3						
63.2	5	3	1	1	1						
	21	12	1	1	1						
	14	14									
Total		3			2						

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B-11822

# PANEL B 60 FT RADIUS 180 BT @ 3'-0"



1

1" NO. 3 PINE BOARDS (DRESSED) PLACED

DATE: 15 JULY 53 RD. NO. 19

PERFORATIONS: ● =

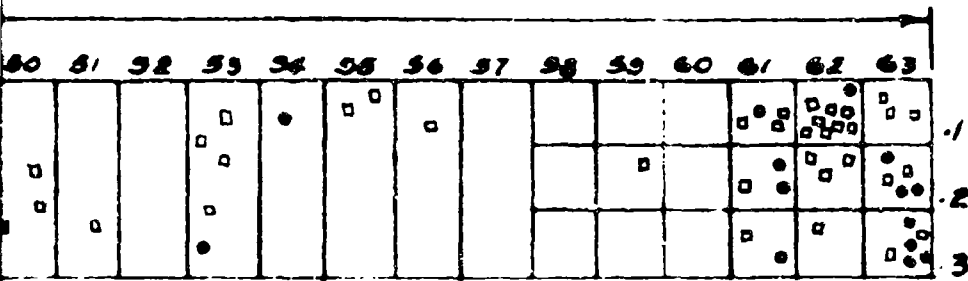
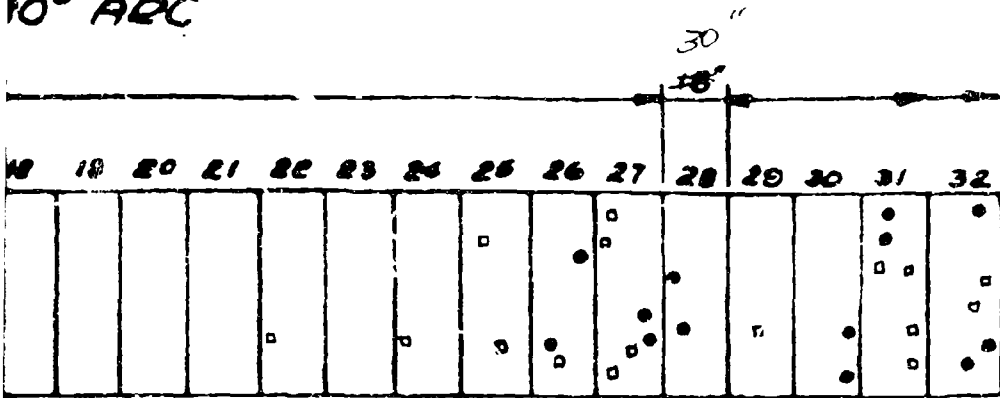
SHELL: 122MM, SOVIET

PENETRATIONS: □ =

POSITION OF SHELL: HORIZONTAL

RECEIVED  
15 JUL 1953

10° ARC



ED VERTICALLY.

2

54  
75

RANGE OPERATIONS SECTION

LAYOUT OF PANELS  
FOR  
NUMBER AND DISTRIBUTION  
OF FRAGMENTS  
(60 FT. RADIUS)

ABERDEEN PROVING GROUND, MD  
OCT. 27, 1944  
ANG 11876-14 PR

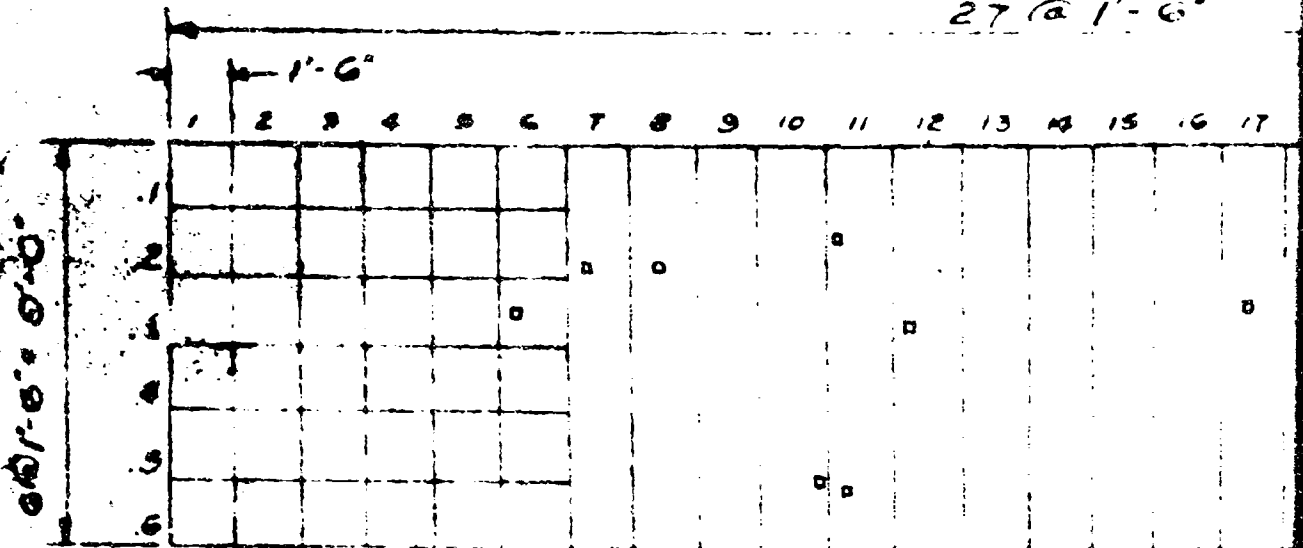
B-11822

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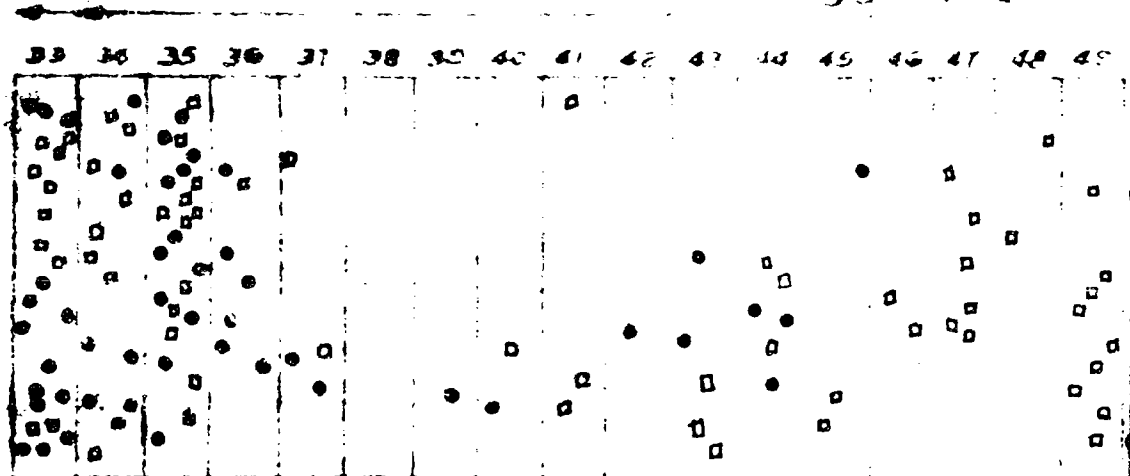
PANEL A

30 FT RADIUS

27 @ 1'-6"



35 @ 1'-6"



1" NO. 3 PINE BOARDS (DRESSED) PLACED

DATE: 15 JULY 53 RD. NO. 19

PERFORATIONS: 0

SHELL: 122MM SOVIET

PENETRATIONS: 0

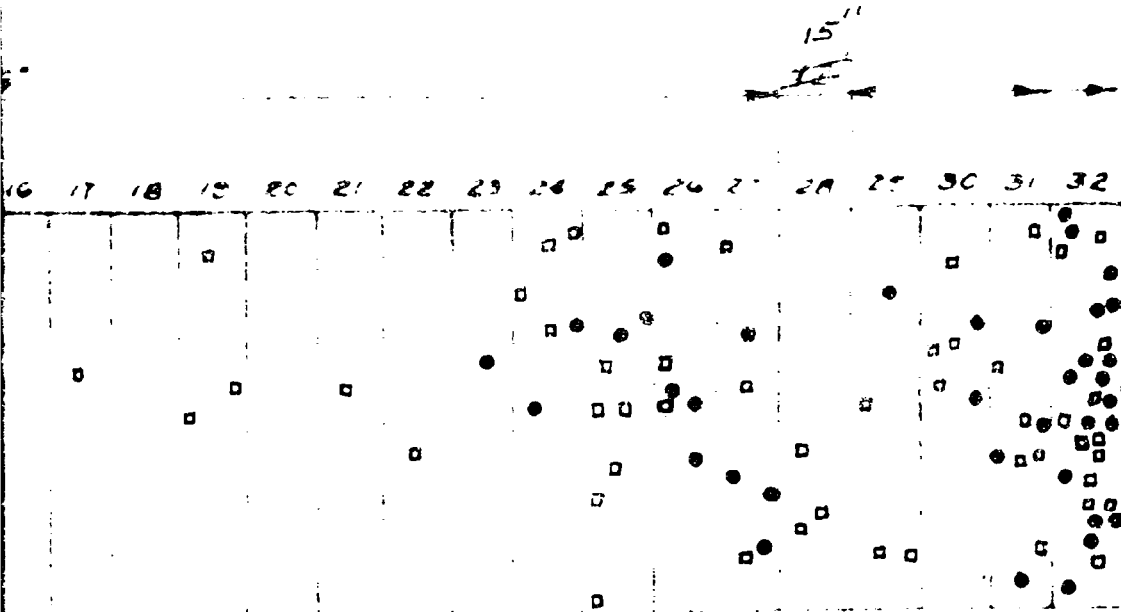
POSITION OF SHELL: HORIZONTAL

CONFIDENTIAL



A

15 180° ARC



2

PLACED VERTICALLY

NS: 124

NS: 216

# RANGE OPERATIONS SECTION

LAYOUT OF PANELS  
FOR

NUMBER AND DISTRIBUTION  
OF FRAGMENTS  
(30 FT RANGING)

ABERDEEN PROVING GROUND MD  
OCT 27 1944  
ADG 11876-15 PR

240X



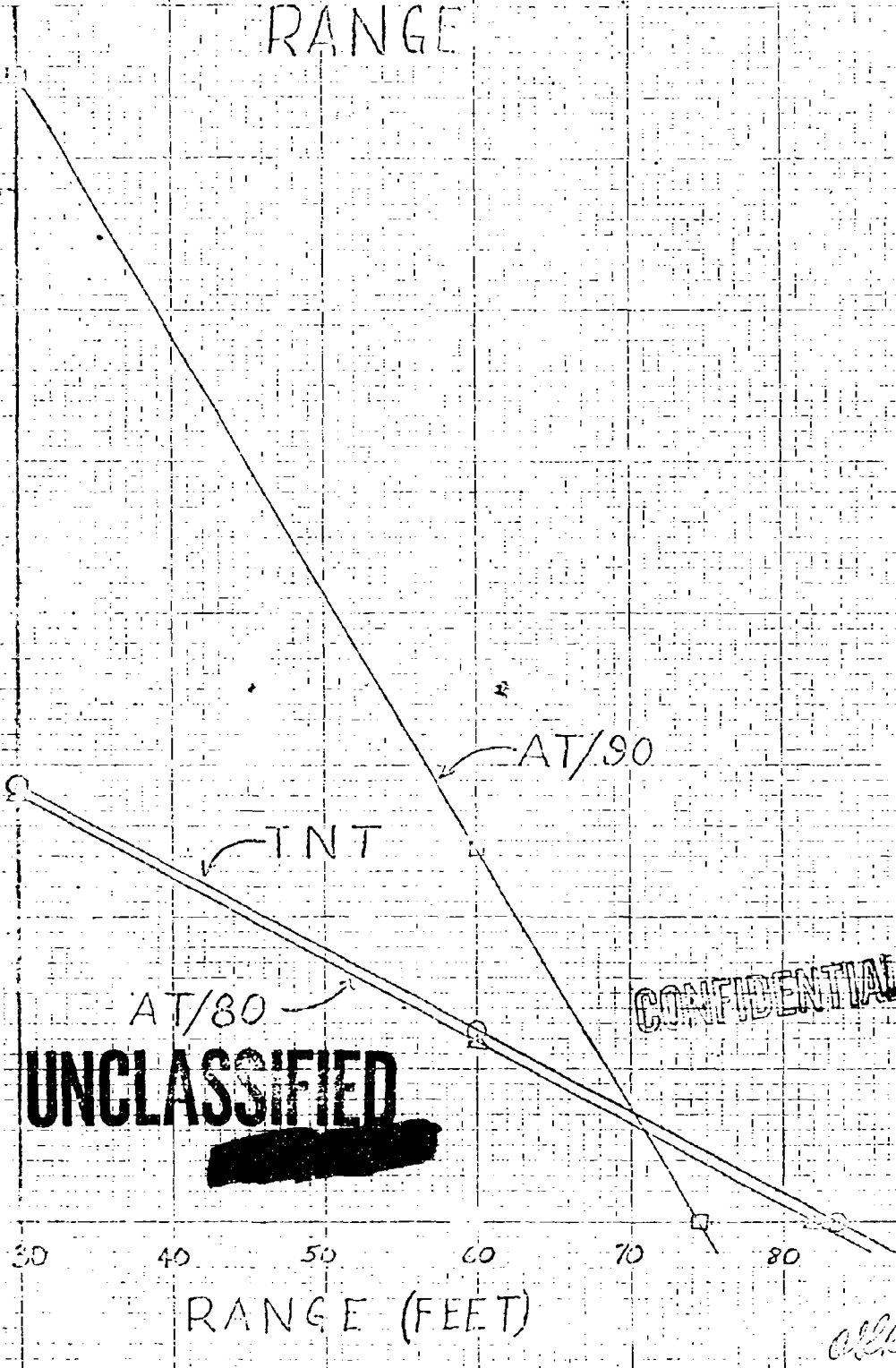
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# COMPARISON OF LETHAL RANGE

PERFORATING HITS

200

100



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UNCLASSIFIED

OK

13

14

15

16



0 1 2 3

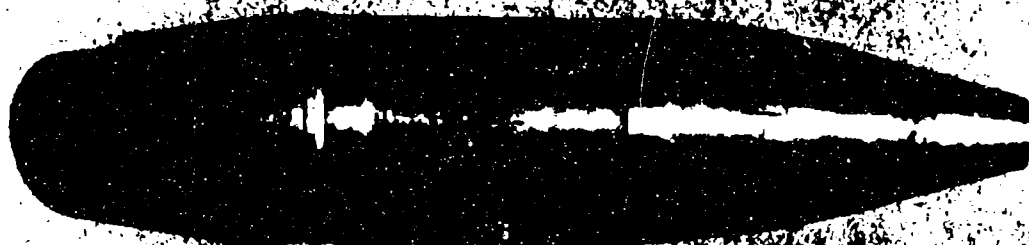
AFG159

8 ABERDEEN PROVING GROUND 8

1 May 1952

Shell, 122mm, OF-471-N (Soviet).

[REDACTED]



A78158

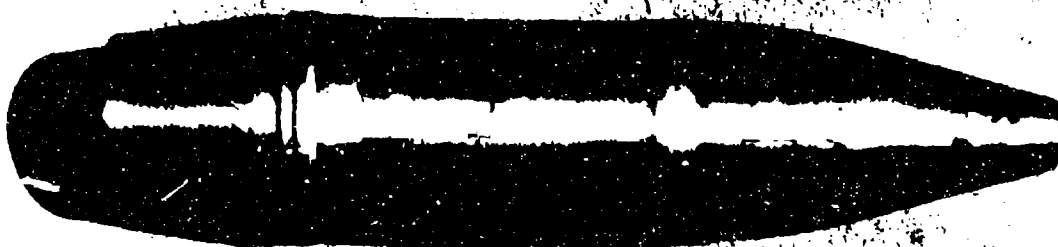
2 ABERDEEN PROVING GROUND 3

1 May 1952

Shell, 122mm, O-462A (Soviet).

RECEIVED  
FBI  
MAY 1 1952

[REDACTED]



A78157

3 ABERDEEN PROVING GROUND 2  
Shell, 122mm, OF-462 (Soviet).

1 May 1952

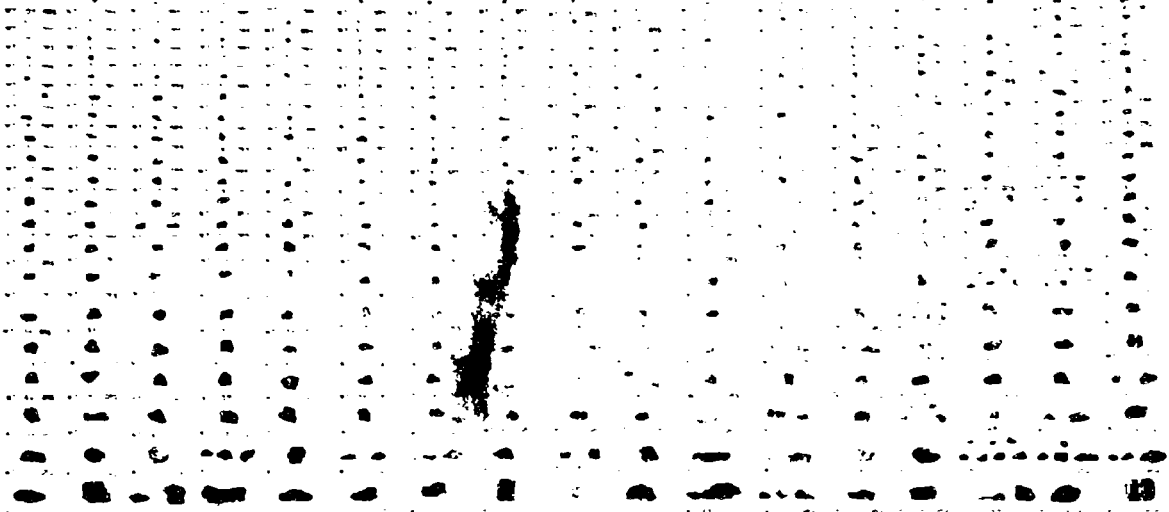
CONFIDENTIAL

CONFIDENTIAL

NO FRAGMENT NO VELOCITY  
RECORDED ARE NOT RECORDED

NO FRAGMENT NO VELOCITY  
RECORDED ARE NOT RECORDED

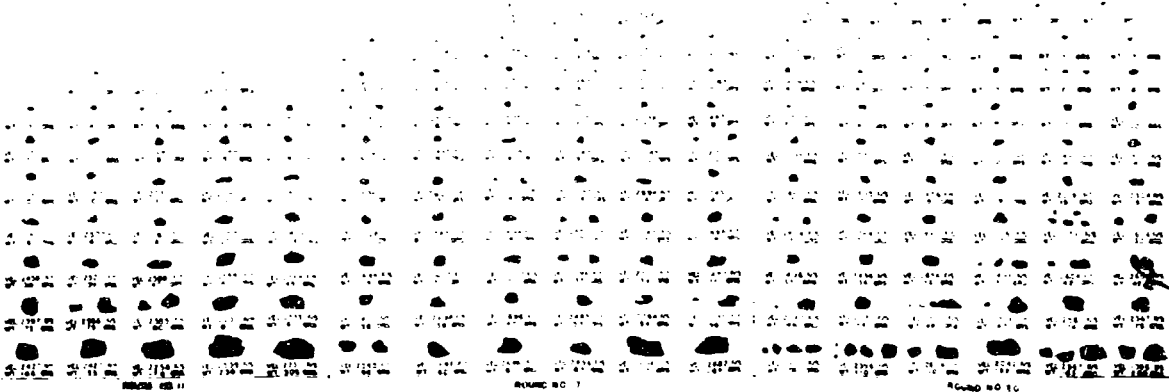
NO FRAGMENT NO VELOCITY  
RECORDED ARE NOT RECORDED



NO FRAGMENT NO VELOCITY  
RECORDED ARE NOT RECORDED

NO FRAGMENT NO VELOCITY  
RECORDED ARE NOT RECORDED

NO FRAGMENT NO VELOCITY  
RECORDED ARE NOT RECORDED



NO FRAGMENT NO VELOCITY  
RECORDED ARE NOT RECORDED

NO FRAGMENT NO VELOCITY  
RECORDED ARE NOT RECORDED

NO FRAGMENT NO VELOCITY  
RECORDED ARE NOT RECORDED

A97557

8 ABERDEEN PROVING GROUND 8

9 April 1954

Project No. TB3-0036. Shell Fragment Identification.

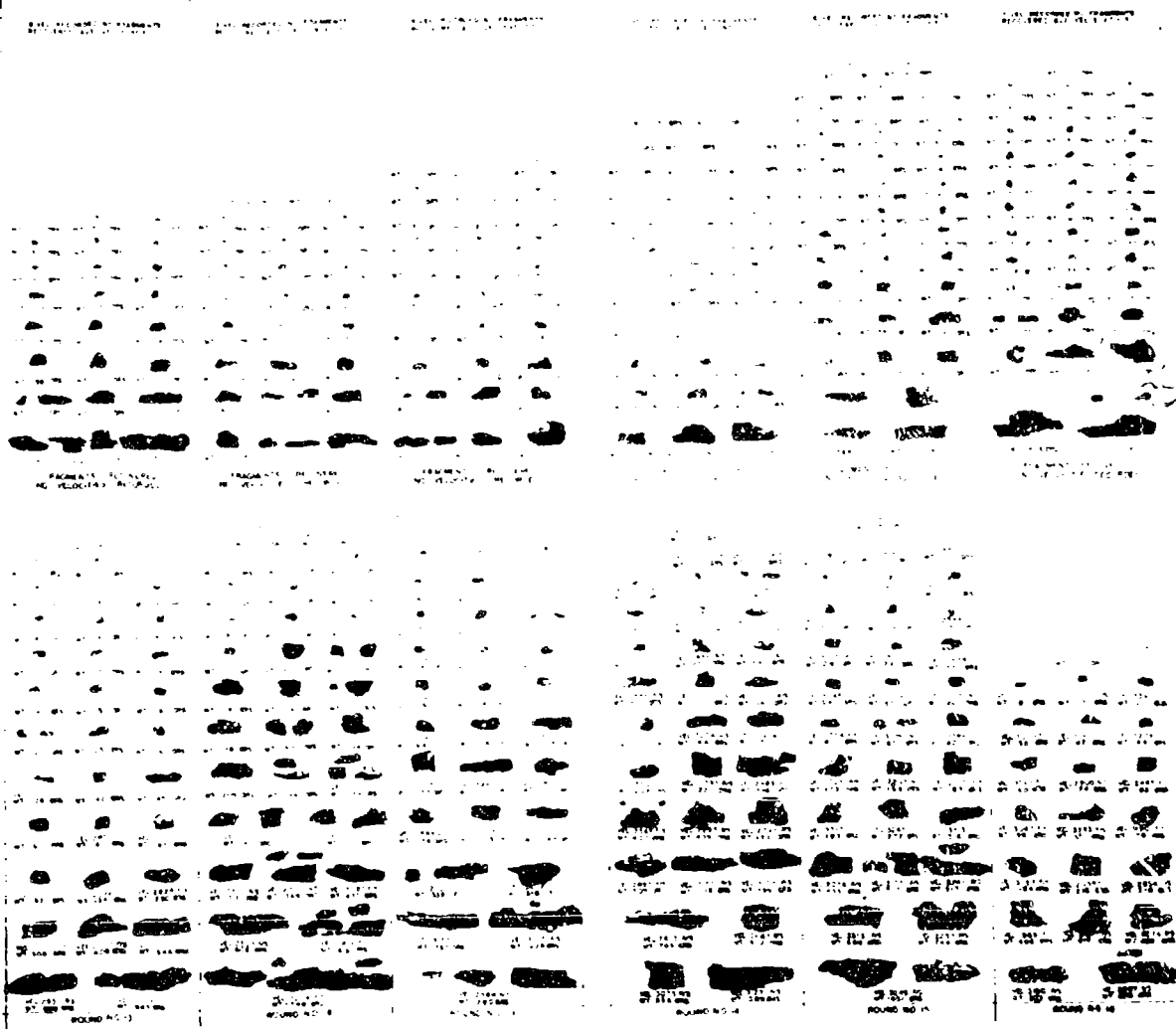
Fragments, with their respective velocities, of Shell, HE, 122mm,  
Soviet, loaded AT/90.



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A97558

8 ABERDEEN PROVING GROUND 8

9 April 1954

Project No. TB3-0035. Shell Fragment Identification.  
Fragments, with their respective velocities, of Shell, HE, 122mm,  
Soviet, Rounds No. 13, 18 and 19 loaded AT/20, 14, 15 and 16 loaded  
TWT.

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